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This report presents the results of correlational and factorial analyses of items from the twelfth-grade student questionnaire of the Educational Opportunities Survey. The correlational analyses were conducted to document the inter-relationships among the items and to serve as a basis for the factor analyses. The factor analyses were conducted in order to reduce the number of variables or items in an empirically meaningful way so that the volume of data processing and complexity of later analyses could be reduced. By empirically meaningful is meant that groups of variables (or factors) would be sought that correlated moderately or highly with one another and low with other groups of variables and that were psychologically or sociologically meaningful groupings. (AUTHOR)

NATIONAL CENTER FOR EDUCATIONAL STATISTICS
Division of Operations Analysis

CORRELATIONAL AND FACTORIAL ANALYSES OF ITEMS FROM THE TWELFTH GRADE STUDENT QUESTIONNAIRE OF THE EDUCATIONAL OPPORTUNITIES SURVEY

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Correlational and Factorial Analysis of Items From the Twelfth Grade Student Questionnaire of the Educational Opportunities Survey

INTRODUCTION

This report presents the results of correlational and factorial analyses of items from the twelfth grade student questionnaire of the Educational Opportunities Survey (see Coleman in the List of References). The correlational analyses were conducted to: document the inter-relationships among the items and to serve as a basis for the factor analyses. The factor analyses were conducted in order to reduce the number of variables or items in an empirically meaningful way so that the volume of data processing and complexity of later analyses could be reduced. By empirically meaningful is meant that groups of variables (or factors) would be sought that correlated moderately or highly with one another and low with other groups of variables and that were psychologically or sociologically meaningful groupings.

THE MEANING OF CRITERION SCALING AND A CRITERION SCALED VARIABLE

The twelfth grade questionnaire contained 116 questions relating to various aspects of the student's life including such items as his parents education, presence of a father or a father figure in the home, possessions in the home, desires for education and aspirations for further academic work, attitudes toward life, etc. In addition, the questionnaire contained the following tests: verbal ability; non-verbal ability; reading comprehension; mathematics achievement and a test of general information. Fifty-seven of the 116 questionnaire items and the five tests were included in these analyses. The other 59 questionnaire items were excluded from the analyses either because they were judged to be irrelevant to the present analyses or they were considered to be best kept as separate variables for special studies. Therefore, such items as which of the fifty states an individual or his mother was born in, what particular courses he is enrolled in school, or the length of time it takes the student to get to school were not considered to be relevant to the present analyses even though they may be potentially important variables for other kinds of analyses. Similarly, many of the variables concerned with preference for different racial groups and extent of school and classroom integration were judged to be best kept as separate variables for special studies.

Earlier analyses (see Weinfeld, et.al, TN No. 51 in the List of References) of the ninth grade student questionnaire computed the average achievement score obtained by individuals choosing each question (or item) response

alternative. The achievement score was a composite measure obtained by weighting each student's standardized test scores (standardized to a mean of zero and a standard deviation of one) by the following weights:

	Ninth Grade	Twelfth Grade
Non-Verbal	.76	.78
Verbal	.92	.91
Reading Comprehension	.87	.87
Mathematics Achievement	.85	.85
General Information	.91	.90

These weights were obtained from an earlier analysis of the intercorrelations among the five tests (see Mayeske and Weinfeld, TN No. 21 in the List of References). This earlier analysis showed that the tests were sufficiently highly intercorrelated to enable them to be combined into a single composite measure. The weights used to accomplish this were obtained from the first principal component or axis of the test intercorrelations (see Horst in the List of References for a detailed description of this procedure). An analysis like the one for the ninth grade was conducted on the intercorrelations of the twelfth grade tests. The weights from the first principal component of these intercorrelations are given above along with the ninth grade weights. Since the twelfth grade weights were so similar to the ninth grade weights the ninth grade weights were used to obtain the Achievement composite for the twelfth grade.

An example of a questionnaire item which has been analyzed against this Achievement composite is given in Table 1.

TABLE 1.- Average Achievement Scores of Ninth Grade Students for Response to Number of Persons in the Home

Question: How many people live in your home?

Response	Alternative	Percent of Students Claiming That Alternative	Average Achievement Score of Students Choosing that Alternative
(A)	2	1.9	48.055
(B)	3	9.5	51.253
(C)	4	20.9	52.399
(D)	5	21.7	51.783
(E)	6	16.7	50.543
(F)	7	10.4	48.763
(G)	8	6.6	47.423
(H)	9	4.0	45.542
(I)	10	2.5	44.330
(J)	11 or more	4.2	43.223
NR	(Skipped question or failed to respond)	1.5	39.864
TOTAL		100.0	50.000

The analysis presented in Table 1 is sometimes called a criterion scale analysis, (see Weinfeld et al, TN 51 in the List of References for a technical exposition of criterion scaling). In this case the achievement composite (standardized to a mean of 50 and a standard deviation of 10) is the criterion and the analysis shows how the persons choosing the different response alternatives score on the composite. When an item (or variable) is coded by assigning each response alternative its respective criterion mean, the item is said to be criterion scaled. This manner of coding an item guarantees that it will be maximally correlated to the criterion or variable to be predicted. The criterion scaling may alter the meaning of a variable. Thus, as in Table 1, a criterion scaling of Number of Persons in the Home results in a variable which is better labeled "Number of Persons in the Home Optimally Related to Achievement". The optimum in this case occurs at about four persons with the achievement values descending for more or fewer persons in the home.

LIST OF VARIABLES AND MANNER OF CODING

The following is a list of variables used in the analyses and their interpretation according to the codes assigned. In most cases the codes were obtained from the criterion scale analyses and are given in Appendix A.

VARIABLE NUMBER	TITLE	MANNER OF CODING
1	Sex	Scored high for female, low for male.
2.	Age	Scored high for age 16 and 17, lower for younger or older ages.
3	Area in Which the Student Has Spent Most of His Life	Scored high for residence in another state, low for local and out of country.
4	Type of Community in Which Student Has Spent Most of His Life	Scored high for large city suburbs and medium size cities, low for rural and inner cities.
5	Racial-Ethnic Differences	Scored high for whites and Oriental-Americans, low for Negroes, Puerto-Ricans, Mexican-Americans and Indian Americans.
6	Number of Persons Living in Home	Scored high for 3, 4 and 5 persons, lower for more or fewer persons.
7	Number of Siblings	Scored high for 1 or 2, lower for more or fewer siblings.
8	Number of Older Siblings	Scored highest for none and lower for increasingly larger numbers of older siblings.
9	Number of Siblings Dropped out of High School	Scored high for no older siblings or no dropouts and lower for increasingly larger numbers of dropouts.

(Continued)--

VARIABLE NUMBER	TITLE	MANNER OF CODING
10	Parents Speak a Foreign Language in the Home	Scored high for English spoken most of the time.
11	Student Speaks a Foreign Language Outside of School	Scored high for rarely, intermediate for occasionally or not at all, and low for frequently.
12	Number of Rooms in the Home	Scored highest for 6 to 10 rooms, lower for fewer rooms.
13	Who Acts as Father	Scored high for father living at home, lower for some other person serving as father.
14	Who Acts as Mother	Scored high for mother living at home, lower for some other person serving as mother.
15	Father's Occupational Level	Scored high for professional, sales, managerial and technical occupations, low for farm worker laborer.
16	Father's Educational Level	Scored higher for increasingly more years of education.
17	Mother's Educational Level	Score higher for increasingly more years of education
18	Family's Source of Income	Scored high for father's work major source, low for mother or other relative.
19	Mother's Work	Scored high if mother doesn't work, low if she is employed full-time.
20	Mother's Desire for Child's Academic Excellence	Scored high for one of best students in class or above average, low for just good enough to get by.
21	Father's Desire for Child's Academic Excellence	Same as variable 20.

(Continued)--

VARIABLE NUMBER	TITLE	MANNER OF CODING
22	School Discussions With Parents	Scored high if discussions are held daily or weekly, low if discussions aren't held at all.
23	Father's Desire for Child's Educational Level	Scored high if father wants child to have four or more years of college, low for finishing high school or less.
24	Mother's Desire for Child's Educational Level	Same as variable 23.
25	Frequency of Parents PTA Attendance	Scored high for frequent attendance at meetings and lower for less frequent attendance. Also scored high if the school does not have PTA.
26	Pre-School Reading	Scored high if the student was read to frequently before he started school, low for not at all or infrequently.
27	Appliances in the Home	Scored high for possession of a TV set, telephone, hi fi, or stereo, refrigerator, automobile, vacuum cleaner, etc., low for non-possession.
28	Reading Materials in the Home	Scored high for subscription to a daily newspaper, magazines, possession of an encyclopedia, number of books in the home, etc. low for non-possession.
29	Kindergarten Attendance	Scored high for attendance; low for non-attendance.
30	Frequency of Changes in School	Scored high for few or no changes, low for two or more.

(Continued)--

VARIABLE NUMBER	TITLE	MANNER OF CODING
31	Recency of Change in School	Scored high for no change or a change of three or more years ago, low for a more recent change.
32	Desire for Higher Education	Scored high if student desires to go to college or postgraduate work, lower for less education desired.
33	College Plans	Scored high for definite college plans, low for non-college plans.
34	Number of Books Read During Summer	Scored high for many books, low for few or none.
35	Hours Watching TV	Scored high for 1 to 3 hours of TV viewed per day, lower for more or less.
36	Attitude Towards School	Scored high if student would do most anything to continue in school, low if he'd like to quit.
37	Students Own Desire to Excel	Scored high if student wants to be one of best in class or above middle, low for lower aspirations.
38	Study Time	Scored high if student spends one to three hours per day studying outside of school, lower for fewer or more hours.
39	Voluntary Absences	Scored high if student has not stayed away from school just because he wanted to, lower as number of days absent increases.
40	Extra-Curricular Activities	Scored high for participation in many extracurricular activities such as future teachers,

(Continued)--

VARIABLE NUMBER	TITLE	MANNER OF CODING
		athletic team, student council, debate, etc., low for non-participation.
41	Outside Work	Scored high if the student worked 20 hours a week or less, low if more than 20 hours/week.
42	Social Rating	Scored high if the student feels he has a high social rating, low if he thinks he has a lower social rating.
43	Brightness	Scored high if the student feels that he is one of the brightest in his grade, lower if he feels he is one of the less bright.
44	Teacher's Expectations	Scored high if the student feels that his teacher expects him to be above average, low if he feels that his teacher expects him to be below average.
45	Life Condition	Scored high if the student disagrees that people who accept life are happier than those who try to change, intermediate if they aren't sure.
46	Work Success	Scored high if student disagrees that good luck is more important than hard work for success, lower if he agrees.
47	Getting Ahead	Scored high if student disagrees that everytime he tries to get ahead something or someone stops him, lower if he agrees.
48	Success in Life	Scored high if student disagrees that if a person is not successful in life it is his own fault, lower for agree.

(Continued)--

VARIABLE NUMBER	TITLE	MANNER OF CODING
49	Education in Job	Scored high if student disagrees with statement that he'll have a hard time getting the right kind of job even with a good education, lower for agree.
50	Sacrifice	Scored high if student would not make any sacrifice to get ahead, scored low if he would.
51	Want to Change	Scored high if student would not want to be someone else, low if he would.
52	Learning Problem	Scored high if the student feels that he can learn all right, low if he doesn't feel that.
53	Teaching Rate	Scored high if student disagrees that he would learn better if the teachers didn't go so fast, low if he agrees with it.
54	Successful Life	Scored high if student disagrees that people like him don't have a chance to be successful in life, lower if agree.
55	Tough Job	Scored high if student agrees that the tougher the job the harder he works.
56	Ability to Do Well	Scored high if the student says he is able to do many things well, lower if not.
57	Occupational Level Preferred	Scored high for professional and technical aspirants, low for farm workers.
58	Non-Verbal Test Score	Total Correct
59	General Information, Total	Total Correct

(Continued)--

VARIABLE NUMBER	TITLE	MANNER OF CODING
60	Verbal Ability	Total Correct
61	Reading Comprehension	Total Correct
62	Mathematics Achievement	Total Correct

These sixty-two variables were intercorrelated using a computer program that allows for an unequal number of observations on each variable. Unequal observations were usually caused by a student giving two responses to a question either erroneously or because he did not adequately erase one of the answers. There were approximately 96,409 twelfth grade students included in this study. In order to reduce the computer processing time, the analyses were conducted on a random sample of 10,000 of the twelfth grade students. Of these 10,000 students usually no more than 400 were missing a value on any one variable. A few of the variables had 600 missing observations. The means, standard deviations and intercorrelations are given in Appendix B. The results of correlations between selected variables will not be given at this point since they can be more simply and readily discussed in connection with the index correlations which will be given in a later section.

FACTOR ANALYSES - PROCEDURES AND RESULTS

Procedures

As stated earlier the purpose of the factor analyses was to reduce the number of variables in an empirically meaningful way. In order to accomplish these analyses the Principal Components method was used to extract the factors. In the terminology of matrix theory a principal component is similar to an eigenvector, latent vector or characteristic vector, and the amount of variance accounted for by a factor is similar to an eigenvalue, latent root or characteristic root. The principal components method takes out the roots and associated vectors in descending order of magnitude. In other words it maximizes the amount of variance taken out with each successive factor (see Horst in the List of References, especially page 156). The principal components with a root of one or greater were then subjected to a Varimax rotation (see Horst, pages 418 and Kaiser in the List of References). Varimax is a technique for rotating factors so that the variables have high or low weights for each factor. Those variables that are high on a factor might be considered as belonging together and some descriptive or

interpretive label might be applied to them on the basis of what they appear to have in common.

The variables of sex (1), age (2) and racial-ethnic differences (5), were not entered into the initial analyses because it was desired to retain them as separate variables for later special studies. The individual tests were not included since the composite achievement score was to be used in later analyses as a dependent variable. In addition, a number of variables that were eliminated from the ninth grade analyses were also eliminated from the twelfth grade analyses.

The same 47 variables that were used for the ninth grade (see Mayeske et.al., Unpublished Manuscript 80 in the List of References) were subjected to a Principal Components analysis. Table 2 gives the Amount of Variance for each Principal Component and the Cumulative Percent. The percent of variance of a factor is computed utilizing a theorem from matrix theory which states that the trace of a matrix (i.e. the sum of its diagonal elements) is equal to the sum of its roots, (i.e. the total variance of the matrix). Since there are one's in the diagonal of a correlation matrix, the trace is equal to the number of variables. Consequently, dividing the amount of variance for each factor by the number of variables, one obtains the proportion of total variance attributable to a given factor or Principal Component.

The first components, which had roots of one or greater, were subjected to a Varimax rotation (these rotated factors are given in Appendix C). Seven of these 11 factors were interpreted as being essentially the same as those obtained for the ninth grade. The other four were small variance factors which were deleted because the few variables on them could best be retained as separate variables or because variables related to these factors related to other factors and more meaningfully belonged on these other factors. Hence, PTA Attendance (25), Extra Curricula Activities (40), and Foreign Language Spoken by Parents (10) were retained as separate variables.

Results

The following Tables contain those factors which were found to be meaningful. The interpreted factors will be referred to as indices. All variables other than those listed in the Tables are considered to have zero weights for a particular index. A variable can belong to one and only one index. This rule tends to keep the intercorrelations of the index scores low since a variable would tend to increase the correlation between two indices if it contributed positively to both of them. The weights obtained from the ninth grade analyses are also given as a basis for comparison with the weights obtained from the twelfth grade analyses.

TABLE 2.- Amount and Cumulative Percent of Variance Accounted for by Each Principal Component

INDEX	ROOT	PER CENT
1	7.4589	15.87
2	3.2180	22.72
3	2.1646	27.32
4	1.8044	31.16
5	1.6355	34.64
6	1.2939	37.39
7	1.2733	40.10
8	1.2368	42.74
9	1.1181	45.11
10	1.0415	47.33
11	1.0171	49.49
12	0.9790	51.58
13	0.9623	53.62
14	0.9466	55.64
15	0.9282	57.61
16	0.9046	59.54
17	0.8730	61.40
18	0.8526	63.21
19	0.8381	64.99
20	0.8225	66.74
21	0.8050	68.46
22	0.7828	70.12
23	0.7693	71.76
24	0.7653	73.39
25	0.7537	74.99
26	0.7342	76.55
27	0.7138	78.07
28	0.7076	79.58
29	0.6997	81.06
30	0.6877	82.53
31	0.6677	83.95
32	0.6521	85.34
33	0.6456	86.71
34	0.6284	88.05
35	0.6049	89.33
36	0.5960	90.60
37	0.5640	91.80
38	0.5552	92.98
39	0.4889	94.02
40	0.4633	95.01
41	0.4429	95.95
42	0.4356	96.88
43	0.4216	97.78
44	0.3451	98.51
45	0.2710	99.09
46	0.2663	99.65
47	0.1630	100.00

TABLE 3.- Index I: Expectations for Excellence

VARIABLE NUMBER	TITLE	WEIGHTS TWELVE	WEIGHTS NINE
20	Mother's Desire for Child's Academic Excellence	.84	.83
21	Father's Desire for Child's Academic Excellence	.79	.81
37	Student's Own Desire to Excel	.67	.64
44	Teacher's Expectations for Student to Excel	.58	.50

This index involves the student's views of the expectations that he, his parents and his teacher hold for his own academic performance. Consequently it has been labeled Expectations for Excellence. A student with a high score on this index feels that both his mother and his father want him to be one of the best students in his class. The student feels that he would also like to be one of the best students in his class and that his teacher shares this view.

TABLE 4.- Index II: Socio-Economic Status

VARIABLE NUMBER	TITLE	WEIGHTS TWELVE	WEIGHTS NINE
4	Type of Community in Which Student Has Spent Most of His Life	.39*	.53
7	Number of Siblings	.50	.53
12	Number of Rooms in the Home	.30	.22*
15	Father's Occupational Level	.63	.57
16	Father's Educational Level	.71	.66
17	Mother's Educational Level	.66	.64
27	Appliances in the Home	.28**	.28**
28	Reading Materials in the Home	.29	.29

*The single asterisk indicates that the variable came out higher on another index but was considered to more meaningfully belong to this index.

**The double asterisk indicates that the variable was not included in the factor analysis because it was so highly correlated with reading materials in the home (28) but was rather given almost the same weight as variable 28 when computing the index.

This index contains most of the variables (with the exception of income level) which are considered to be indicators of Socio-Economic Status and consequently that name has been given to this index. A student with a high score on this index tends to come from a suburb of a large city or from a medium size city, has one or two siblings, lives in a six to ten room house, his father is engaged in a professional, sales, managerial, or technical job, both his mother and his father come from the higher educational strata and there are a large number of appliances and reading materials in his home.

TABLE 5.- Index III: Social Confidence

VARIABLE NUMBER	TITLE	WEIGHTS TWELVE	NINE
41	Outside Work	.50	.57
42	Social Rating	.15	.31
48	Success in Life	.49	.45
54	Tough Job	.60	.56
55	Ability to Do Many Things Well	.74	.51

A student who has a high score on this index works less than 20 hours a week if at all on an outside job, feels that he has a high social rating in the school, feels that lack of success in life is not necessarily an individual's own fault, says that the tougher the job is the harder he works and, feels that he can do many things well. Since, in some respects a high scoring student might subscribe to the philosophy that life is a breeze, in that he can do many things without too much effort and other things well with some effort, this index has been labeled Social Confidence.

TABLE 6.- Index IV: Attitude Toward Life

VARIABLE NUMBER	TITLE	WEIGHTS TWELVE	WEIGHTS NINE
45	Life Condition	.34	.25*
46	Work for Success	.43	.41
47	Difficulty Getting Ahead	.61	.62
49	Education in Job	.46	.49
50	Sacrifice to Get Ahead	.32*	.20*
51	Want to Change	.45	.53
52	Learning Problems	.55	.56
53	Teaching Rate	.56	.57
56	Successful Life	.58	.60

*The asterisks indicate that these variables had higher weights on other indices but more meaningfully belonged on this index even with a low weight.

A student with a high score on this index feels that: people who accept their condition in life are not necessarily happier, hard work is more important than good luck for success, when he tries to get ahead he doesn't encounter obstacles, with a good education he won't have difficulty getting a job, he would not sacrifice everything to get ahead, he would not want to change himself, he doesn't feel that he has difficulty learning, doesn't feel he would do better if his teachers went slower and does feel that people like him have a chance to be successful. Since most of these items pertain to the students Attitude Toward Life, this title has been given to this index.

TABLE 7.- Index V: Family Structure and Stability

VARIABLE NUMBER	TITLE	WEIGHTS TWELVE	WEIGHTS NINE
3	Area in Which Student Has Spent Most of His Life	-.04	.10*
13	Who Acts as Your Father	.85	.84
14	Who Acts as Your Mother	.62	.60
18	Family's Source of Income	.76	.73
19	Mother's Work	.21	.20*
31	Recency of Change in School	.13	.20*

*The asterisks indicate that these variables had higher weights on other indices but more meaningfully belonged on this index even with a low weight.

Many of these items relate to the structure of the student's family. A high scoring student has his regular father and mother fulfilling their roles (as opposed to some substitute figure), his father's salary is the major source of family income and his mother does not work or works only part-time. The high scoring student has not changed schools or if he has this change has not been within the last three years (31) and if he has experienced family mobility it has tended to be across state lines (3). In view of these results this index has been titled Family Structure and Stability. The weights for the ninth and twelfth grade compare favorably except for variable three. For variable three the twelfth grade weight becomes slightly negative but near zero. Inspection of the correlations of these variables with variable three shows that they are low but positive and hence the small weight for variable three might be regarded as zero.

TABLE 8.- Index VI: Educational Desires and Plans

VARIABLE NUMBER	TITLE	WEIGHTS TWELVE	WEIGHTS NINE
23	Father's Desire for Child's Educational Level	.83	.81
24	Mother's Desire for Child's Educational Level	.85	.82
32	Student's Desire for Higher Education	.83	.80
33	Student's Plans for College	.72	.74
43	Brightness	.30	.29
57	Occupational Level Preferred	.59	.46

A student with a high score on this index says that both his mother and father want him to go to college and that he, in turn, both desires and plans to go to college. He feels that he is one of the brightest students in his grade and aspires to a high occupational level such as professional and technical jobs. This index has been named Educational Desires and Plans.

TABLE 9.- Index VII: Study Habits

VARIABLE NUMBER	TITLE	WEIGHTS TWELVE	WEIGHTS NINE
22	School Discussions With Parents	.10*	.34
26	Pre-School Reading	.06*	.33
34	Number of Books Read During Summer	.06*	.48
35	Number of Hours Watching TV	.35	.49
36	Attitude Towards School	.54	.47
38	Study Time	.46	.62
39	Voluntary Absences	.48	.34*

*The asterisk indicates that this variable had a higher weight on another index but that it was more meaningful on this index.

A student with a high score on this index: has daily or weekly discussions with his parents about his school work, was read to frequently before he started school, read many books during the summer, watches TV one to three hours per day, would do most anything to continue in school, spends one to three hours per day studying outside school and has seldom stayed away from school just because he wanted to. This index has been labeled Study Habits. Although the weights for the twelfth grade students are much lower than the weights for the ninth grade students on the first three variables in Table 9 inspection of the intercorrelations for these variables for both grade levels shows them to be similar (see Appendix B and Mayeske, et.al., Unpublished Manuscript 80).

INDEX SCORE INTERCORRELATIONS

A score on each index was computed for each twelfth and ninth grade student. Since the index weights are so similar for the ninth and twelfth grades the ninth grade weights were used to compute the twelfth grade index scores. The variables that were used to form each index were first standardized using the means and standard deviations in Appendix B of this report and Appendix B of Mayeske, et.al. Unpublished Manuscript 80 to subtract and divide by, respectively.) These index scores were then intercorrelated for the approximately 130,000 ninth grade students and the 96,409 twelfth grade students. The intercorrelations are given in Table 10 (and also in Appendix D.)

TABLE 10.- Index Score Intercorrelations*

		I	II	III	IV	V	VI	VII
I	Expectations	1.00	.26	.18	.28	.18	.51	.34
II	Socio-Economic Status	.40	1.00	.22	.29	.36	.48	.34
III	Social Confidence	.45	.31	1.00	.84	.25	.22	.41
IV	Attitude Toward Life	.47	.38	.85	1.00	.26	.33	.40
V	Family Structure and Stability	.37	.47	.33	.33	1.00	.20	.38
VI	Educational Desires and Plans	.54	.54	.36	.45	.33	1.00	.35
VII	Study Habits	.54	.45	.52	.50	.48	.50	1.00

*The index intercorrelations above the main diagonal (descending from left to right with 1.00 as an entry) are for the twelfth grade and those below the main diagonal are for the ninth grade.

Inspection of Table 10 shows that all of the indices are moderately correlated with one another (with the exception of the two attitudinal indices, Social Confidence and Attitude Toward Life). These correlations are somewhat higher than is usually experienced using factor analytic techniques. The reader should bear in mind however, that the variables have been scaled so as to be maximally related to the Achievement Composite. When the individual variables are weighted and summed these sums are more highly correlated with the Achievement Composite than are the individual variables since what they have in common tends also to be common with the Achievement Composite (unless one rigidly adheres to all the orthogonal Varimax weights which is usually at the sacrifice of a great deal of meaningfulness). The reader will also note that the indices have lower intercorrelations for the twelfth grade than for the ninth grade. This appears to reflect the influence of the dropouts resulting in less variability among students and consequently lower correlations.

It is convenient to summarize the index score intercorrelations by subjecting them to a Principal Components analysis and Varimax rotation. Table 11 gives the amount and cumulative percent of variance accounted for by the Principal Components for the twelfth and ninth grades. (These terms are the same as those defined for Table 2).

TABLE 11.- Amount and Cumulative Percent of Variance Accounted for by Each Principal Component

Principal Component	Twelfth		Ninth	
	Root	Percent	Root	Percent
1	3.05	.44	3.75	.54
2	1.23	.61	.99	.68
3	.93	.74	Not Computed	

Although components beyond the first two were not extracted for the ninth grade, Table 11 shows that 68 percent of the variance is accounted for by the first two Principal Components for the ninth grade and 61 percent for the twelfth grade. The results of a Varimax rotation of these first two factors for each grade level is given in Table 12.

TABLE 12.- Varimax Rotation of First Two Principal Components From the Index Score Intercorrelations

	Index Title	Varimax* Factor Weights 1		Varimax Factor Weights 2	
		12	9	12	9
I	Expectations	.11	.62	.99	.79
II	Socio-Economic Status	.19	.14	.98	.99
III	Social Confidence	.99	.98	.10	.19
IV	Attitude Toward Life	.97	.96	.23	.27
V	Family Structure and Stability	.53	.19	.85	.98
VI	Educational Desires and Plans	.12	.39	.99	.92
VII	Study Habits	.65	.60	.76	.80

*These are the Varimax rotations of the first and second Principal Components.

The first factor in Table 12 is an attitudinal constellation while the second factor involves the Socio-Economic-Family Structure constellation particularly as it involves desires and plans for higher education and the development of expectations and practices in support of these desires and plans. The weights give the relative contribution of each index to the attitudinal constellation (factor 1) and the socio-economic family structure constellation (factor 2).

CORRELATIONS OF INDICES WITH SELECTED OTHER VARIABLES

We can also learn more about the nature of these indices by seeing to what extent they correlate with other variables left out of the analyses. Some of these selected correlations are given in Table 13 (and also in Appendix D).

The reader will note that the Achievement Composite is listed as both a variable and an index in Table 13, in order to show the relationship of the other variables to the Achievement Composite.

Some of the indices, such as Socio-Economic Status (II) and Family Structure and Stability (V), can be regarded as influences that affect the student but are not directly affected by the school. The remaining indices however, can be influenced by both the school and the home background. It may be well to keep these variables separate, at least conceptually, in interpreting these analyses. It is particularly interesting to note that Socio-Economic Status(II) is the highest correlate of the Achievement Composite for the ninth grade and the next to the highest for the twelfth grade while Educational Desires and Plans (VI) and Attitude Toward Life (IV) are close seconds. These

TABLE 13.- Index Correlations With Selected Variables Eliminated from the Analyses for the Ninth and Twelfth Grade Indices

VARIABLE NUMBER*	TITLE		Index Number and Title I EXPCTNS	I SES	II SOC. CONFIDENCE	III ATT. TO LIFE	IV FAM. STRCTR. & STABILITY	V ED. DESIRES & PLANS	VI STUDY HABITS	VII ACH.	VIII
8	Achievement Composite	Ninth	.39	.54	.30	.47	.33	.51	.36	—	
		Twelfth	.35	.48	.25	.42	.23	.49	.23	—	
9	Sex	Ninth	.20	.26	.24	.21	.34	.16	.36	.13	
		Twelfth	.08	.13	.09	.05	.20	.16	.14	.07	
11	Racial-Ethnic Differences	Ninth	.17	.41	.25	.30	.35	.16	.24	.47	
		Twelfth	.00	.35	.24	.28	.27	.06	.13	.45	
15	Foreign Language Spoken by Parents	Ninth	.22	.26	.20	.20	.33	.17	.31	.18	
		Twelfth	.13	.18	.13	.16	.22	.10	.24	.14	
16	Foreign Language Spoken by Student	Ninth	.22	.29	.21	.21	.31	.21	.33	.18	
		Twelfth	.14	.21	.13	.14	.18	.16	.23	.14	
17	Frequency of Parents PTA Attendance	Ninth	.31	.33	.27	.26	.34	.31	.44	.18	
		Twelfth	.16	.20	.17	.18	.22	.18	.31	.14	
18	Attended Kindergarten	Ninth	.25	.40	.28	.26	.33	.30	.41	.24	
		Twelfth	.07	.34	.17	.16	.18	.18	.26	.20	
19	Infrequent Change in School	Ninth	.32	.29	.37	.32	.45	.27	.53	.18	
		Twelfth	.13	.20	.29	.25	.34	.14	.51	.10	

*These are the variable numbers as they appear in Appendix D.

correlations suggest that some systematic regression analyses might yield some high multiple correlations of these indices with the Achievement Composite. Some of these regression analyses are conducted in the next section.

It is surprising to see that sex (9) is more highly correlated with the indices than with the Achievement Composite. Evidently girls enjoy a better family background than boys and have a more favorable outlook on life, better study habits and higher expectations and plans than do boys.

The variable of Racial-Ethnic differences (11) is moderately correlated with Achievement (VIII), Socio-Economic Status (VI), Family Structure and Stability (V) and slightly less correlated with the remaining indices. The pattern of correlations of this variable with the others suggests that this is an important variable to look at in a regression analysis with other variables.

Both Foreign Language Spoken by the Parents (15) and Foreign Language Spoken by the Student (16) show similar correlations with the other indices. Apparently the same kinds of conditions are involved in the use of a Foreign Language, whether it is spoken by the parents or by the student.

The frequency with which a student's parents attend PTA is moderately related to all of the indices but most highly to the home background - academic orientation constellation which was characterized by the second factor in Table 12.

It is interesting to note that whether or not a child attended kindergarten (18) is most highly related to the family's Socio-Economic Status (II) and Study Habits (VII). Although both may represent in part the influence of the family, attendance at kindergarten comes earlier in the child's life and may contribute to the development of study habits.

Infrequent Changes in School (19) shows a moderate relationship with Study Habits (VII) and Family Structure and Stability (V). Probably Family Stability is indicated in part by the student's seldom changing schools and Family Stability also plays a role in the development of Study Habits (VII).

This section has shown that the number of variables can be reduced in a meaningful way to a smaller number of indices. Although the intercorrelations are moderately high they can be interpreted meaningfully both with one another and with other variables such as

Racial-Ethnic Difference and Achievement. The next section presents systematic regressions of Achievement against some of these variables.

REGRESSIONS OF ACHIEVEMENT AND ATTITUDINAL INDICES ON HOME BACKGROUND, SEX, AND RACE

Several of the indices such as Expectations (I), Attitude Toward Life (IV), Educational Desires and Plans (VI), Study Habits (VII) and Achievement (VIII) can be viewed as being influenced by both the family and the school. Still other indices such as Socio-Economic Status (II) and Family Structure and Stability (V) influence the child but are not directly influenced by the school. It may be best therefore to keep this former set as dependent variables and see what other indices and variables are useful in estimating them using multiple regression techniques. It is particularly instructive to see how family background (Socio-Economic Status (II) and Family Structure and Stability (V))combine with Sex (9) and Racial-Ethnic differences (11) to predict the Achievement (VIII) and Attitudinal indices (I, IV, VI and VII). The following tables give the squared multiple correlations for different combinations of these variables.

TABLE 14.-Squared Multiple Correlations for the Regression of Achievement and Attitude Indices on Home Background* for Ninth and Twelfth Grade Students

INDEX NUMBER	TITLE		SES (1)	SES and FSS (2)	DIFFERENCE (2) - (1)
I	Expectations	Ninth	.1572	.1990	.0418
		Twelfth	.0676	.0765	.0089
II	Attitude Toward Life**	Ninth	.1474	.1777	.0303
		Twelfth	.0841	.1110	.0269
VI	Educational Desires and Plans	Ninth	.2859	.2935	.0076
		Twelfth	.2267	.2278	.0011
VII	Study Habits	Ninth	.2021	.2977	.0956
		Twelfth	.1156	.1920	.0764
VIII	Achievement	Ninth	.2886	.2964	.0078
		Twelfth	.2304	.2320	.0016

*The abbreviation for Socio-Economic Status is SES, and for Family Structure and Stability, FSS; the two together are called Home Background.

**Social Confidence (III) was eliminated because it was so highly correlated with this index.

Inspection of the columns in Table 14 shows that SES makes a substantial contribution to all of the dependent variables but most particularly to Achievement, Educational Desires and Plans and Study Habits. Column 2 shows the contribution of FSS in combination with SES. The column labeled DIFFERENCE is obtained by subtracting the values in column 1 from the values in column 2. This difference which is a unique proportion of variation is interpreted to be the unique contribution of FSS to the prediction of these dependent variables after SES has been taken into account. Clearly, FSS makes a slight contribution, in addition to SES, to Study Habits, Expectations and Attitude Towards Life for the ninth grade and to Study Habits and Attitude Toward Life for the twelfth grade.

It is quite reasonable that both SES and FSS would be related to all of these dependent variables. Parents of different socio-economic levels hold different values toward education and achievement and socialize their children differently in light of these values. Children of parents from higher socio-economic strata enjoy more physical comforts and experience fewer barriers in achieving SES levels comparable to their parents than does a child of lower SES who wants to achieve an SES level higher than that of his parents. Also a child from a stable family structure may experience a more secure psychological environment. All of these factors may contribute to the development of a future oriented, achieving child who has a very favorable outlook on life and consequently has a high score on each of these various dependent variables.

TABLE 15.-Squared Multiple Correlations for the Regression of Achievement and Attitude Indices on Home Background, Racial-Ethnic Differences and Sex for Ninth and Twelfth Grade Students

INDEX NUMBER	TITLE		HB* (1)	HB & RACE (2)	HB, RACE & SEX (3)	HB & SEX (4)	(2)-(1)	(4)-(1)	(3)-(2)	(3)-(4)
I	Expectations	Ninth	.1990	.2000	.2029	.2019	.0010	.0029	.0029	.0010
		Twelfth	.0765	.0902	.0909	.0773	.0137	.0008	.0007	.0136
IV	Att. To Life	Ninth	.1777	.1938	.1998	.1836	.0161	.0059	.0060	.0162
		Twelfth	.1110	.1374	.1375	.1111	.0264	.0001	.0001	.0264
VI	Ed. Desires and Plans	Ninth	.2935	.3000	.3000	.2935	.0065	.0000	.0000	.0065
		Twelfth	.2278	.2414	.2507	.2374	.0136	.0096	.0093	.0133
VII	Study Habits	Ninth	.2977	.2977	.3282	.3282	.0000	.0305	.0305	.0000
		Twelfth	.1920	.1929	.1954	.1941	.0009	.0021	.0025	.0013
VIII	Achievement	Ninth	.2964	.3645	.3655	.2975	.0681	.0011	.0010	.0680
		Twelfth	.2320	.3181	.3182	.2320	.0861	.0000	.0001	.0862

*The abbreviation for Home Background is HB. HB is comprised of SES and FSS.

Table 15 contains the squared multiple correlations and their differences for various combinations of Home Background, Race, and Sex.

The first question that one can ask in perusing this table is: What is the contribution of Racial and Ethnic differences after equating students for differences in their Home Background? This is answered by observing the first 2 columns and their difference in the DIFFERENCES columns. These columns show that Racial and Ethnic differences make a substantial contribution to Achievement and a slight contribution to the other dependent variables.

Another question one can ask in looking at Table 15 is: Is Sex related to these indices after equating students for differences in Home Background? This question is answered by looking at columns 1 and 4 and their difference in the unique variance columns. This shows that Sex appears to make a contribution only to Study Habits for the ninth grade but not for the twelfth grade. A related question immediately arises however as to whether or not Sex is needed as an explanatory variable after equating students for differences in Home Background and Race. This question is answered by observing the values in columns 2, 3 and 4 and their differences in the last two DIFFERENCES columns. Comparison of these latter two columns shows that Sex continues to make a contribution to Study Habits (see column (3)-(2), after equating students for differences in Home Background and Race. The column labeled (3)-(4) shows that Racial and Ethnic differences continue to make a contribution to Achievement and Attitude Towards Life after equating students for differences in Home Background and Sex. Hence, Sex may be needed as a variable only in predicting Study Habits at the ninth grade whereas Racial-Ethnic Differences are important in analyzing Achievement and Attitude Towards Life at both grade levels.

Another way of looking at these variables is to classify them into subgroups. Although any classification of these variables into subgroups must be somewhat arbitrary a group of variables relating to the more stable or fixed aspects of the family and a group of variables pertaining to the kinds of relationships that parents have with their children might be defined. Thus the variables of Socio-Economic Status, Family Structure and Stability, Sex of the child and the Racial-Ethnic Group membership of the child might be regarded as more fixed or hard to change aspects of the family. We might name this set of variables as Structural variables. Similarly, the variables of Expectations, Attitude Toward Life, Educational Desires and Plans and Study Habits can be regarded as a set of Process variables viz. a set of variables concerned with the kinds of things parents do with their children and the attitudes that they have about them. Table 16 gives squared multiple correlations for the regression of Achievement on these two sets of variables for both ninth and twelfth grade students.

The first two columns in Table 16 give the squared multiple correlations for the Process and Structure variables respectively. These values show that Achievement is about equally predictable from the Process and Structure variables for the twelfth grade and slightly more predictable from the Structure variables at the ninth grade. Column 3 gives the squared multiple correlations when both Process and Structure variables are entered into the regression. A squared multiple correlation of .47 represents a multiple correlation of about .69 which is a relatively high value for predicting individual student Achievement. Achievement at both grade levels is highly predictable using these two sets of variables.

The fourth and fifth columns in Table 16 represent the unique contributions for the Process and Structure variables respectively. For example, the unique contribution of the Structure variables is obtained by subtracting from the squared multiple correlation in column 3, obtained when both sets of variables are entered into the regression, the value in column 1 obtained when only the Process variables are entered into the regression. The values indicate that there is a substantial unique contribution of each set of variables to Achievement and that the unique values are greater at the twelfth than at the ninth grade. Table 16 also shows that at the ninth grade the unique contribution of the Structure variables is slightly greater than the Process variables.

Table 16 also shows that there is a considerable amount of overlap or variance in common to the two sets of variables. If the two sets of variables were uncorrelated then the squared multiple correlation obtained when both sets of variables are entered into the regression (column 3) would be merely the sum of the squared multiple correlations obtained when Achievement is regressed against each set individually (columns 1 and 2). Since the values in column 3 are nowhere near the sum of the values in columns 1 and 2 we can conclude that there is a great deal of overlap or correlation among the two sets of variables.

The development of a measure of this overlap or correlation is given in Wisler (see List of References). The line of reasoning runs somewhat as follows:

Let C(P,S) stand for the commonality or overlap of the Process (P) and Structure (S) variables.

R^2(P) the squared multiple correlation of the Process variables with Achievement.

R^2(S) - the squared multiple correlation of the Structure variables with Achievement.

TABLE 16.-Squared Multiple Correlations for the Regression of Achievement on Family Structure and Family Process Variables for Ninth and Twelfth Grade Students

	PROCESS* (1)	STRUCTURE* (2)	PROCESS & STRUCTURE (3)	UNIQUE STRUCTURE (3)-(1)	UNIQUE PROCESS (3)-(2)
Ninth	.3358	.3655	.4742	.1384	.1087
Twelfth	.3207	.3182	.4742	.1535	.1560

*The Process variables are: Expectations; Attitude Toward Life; Educational Desires and Plans and Study Habits. The Structure variables are: Socio-Economic Status: Family Structure and Stability; Sex and Racial-Ethnic group membership.

$R^2(P,S)$ - the squared multiple correlation of the Process and Structure variables with Achievement

$U(P) = R^2(P,S) - R^2(S)$; the unique contribution of the Process variables

$U(S) = R^2(P,S) - R^2(P)$; the unique contribution of the Structure variables

Then $C(P,S) = R^2(P,S) - U(P) - U(S)$ and $R^2(S)$ and $R^2(S)$ can be expressed as

$$R^2(P) = C(P,S) + U(P)$$

$$R^2(S) = C(P,S) + U(S)$$

Table 17 expresses Achievement as a function of the commonality coefficients and the unique values for the different grade levels.

Table 17 shows that the commonality coefficient C(P,S) is larger for the ninth than for the twelfth grade. This result may again reflect the influence of the dropouts. Thus, if the dropouts who are included in the ninth grade sample have both a less favorable family structure and a less favorable (or involving) family process when they dropout of school by the twelfth grade the remaining students will be more homogeneous. Consequently, Achievement will become slightly less predictable, and the intercorrelations among the independent variables may decrease (although not necessarily uniformly) which could result in a decrease in the commonality coefficient.

Another way of interpreting Table 17 is that most of the predictable variance in Achievement is bound up in the overlap or commonality of Family Process and Structure variables. These findings suggest that there are many things that a low SES non-white family can do that will foster their children's Achievement.

TABLE 17.-The Squared Multiple Correlations of the Process* and Structure* Variables With Achievement Expressed as a Function of Their Unique Contribution and Their Commonality Coefficients

	$R^2(P)$	=	C(P,S)	+	U(P)
Ninth	.3358	=	.2271	+	.1087
Twelfth	.3207	=	.1647	+	.1560
	$R^2(S)$	=	C(P,S)	+	U(S)
Ninth	.3655	=	.2271	+	.1384
Twelfth	.3182	=	.1647	+	.1535

*The Process variables are: Expectations; Attitude Toward Life; Educational Desires and Plans and Study Habits. The Structure variables are: Socio-Economic Status; Family Structure and Stability; Sex and Racial-Ethnic group membership.

CONCLUSIONS

This study attempted to reduce the number of variables from the Educational Opportunities Survey Questionnaire for Twelfth Grade Students in an empirically meaningful way so that the volume of data processing and complexity of later analyses could be reduced.

An Achievement Composite was formed by weighting and summing the student's scores on the following five tests: Non-Verbal Ability, Verbal Ability, Reading Comprehension, Mathematics Achievement and General Information. Fifty-seven of the questionnaire items were coded so as to maximize their correlation with this Achievement Composite. These same items were then intercorrelated and subjected to a series of Principal Components factor analyses and Varimax rotations.

The same seven meaningful indices were developed from these factor analyses that were developed for the Ninth grade students. The indices were labeled as follows:

I Expectations for Excellence

II Socio-Economic Status

III Social Confidence

IV Attitude Toward Life

V Family Structure and Stability

VI Educational Desires and Plans

VII Study Habits

Index intercorrelations were computed using the ninth grade index weights and were found to be moderate in value. Correlations of the indices with other variables were also computed. Some of the more salient findings are that all of the indices are moderately correlated with Achievement and Racial-Ethnic Differences. Comparisons are made with results obtained from the Ninth grade students.

Multiple regression analysis using Socio-Economic Status and Family Structure and Stability as the independent variables and selected other indices as the dependent variables yielded the following multiple correlations for the Ninth and Twelfth grades, respectively:

	Dependent Variable	Multiple Correlations	
		Ninth	Twelfth
I	Expectations for Excellence	.44	.28
IV	Attitude Towards Life	.42	.33
VI	Educational Desires and Plans	.53	.48
VII	Study Habits	.54	.44
VIII	Achievement	.54	.48

These correlations show that Socio-Economic Status and Family Structure and Stability are potent variables in predicting Achievement and the other Attitudinal indices. Other analyses showed that after equating students for differences in Socio-Economic Status and Family Structure, Sex was an important explanatory variable for Study Habits, and Racial-Ethnic Differences was important in explaining Achievement and Attitude Toward Life.

Similar analyses will be forthcoming for principals.

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APPENDIX A

Coding of Items from the Twelfth Grade Student Questionnaire

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
	1		OMIT
	2		OMIT
1	3	A	50.604
		B	49.451
		NR	43.891
2	4	A	43.479
		B	45.503
		C	50.854
		D	51.379
		E	44.112
		F	40.753
		G	42.547
		NR	42.797
3	5	A	50.023
		B	49.779
		C	51.729
		D	42.934
		E	42.552
		F	45.398
		G	47.947
		NR	44.552

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
4	6	A	48.399
		B	50.068
		C	50.546
		D	50.871
		E	49.488
		F	53.639
		G	49.547
		H	54.035
		NR	42.672
5	7	A	39.612
		B	52.111
		C	46.563
		D	49.811
		E	46.187
	8	A	40.906
		B	42.892
		C	
		NR	44.404
6	9	A	49.256
		B	50.996

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
6	9	C	51.286
		D	50.966
		E	49.994
		F	49.326
		G	47.118
		H	45.964
		I	44.796
		J	43.257
		NR	43.769
7	10	A	51.002
		B	52.394
		C	51.908
		D	50.912
		E	49.580
		F	48.310
		G	46.529
		H	45.277
		I	44.091
		J	42.414
		NR	43.269

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
8	11	A	51.686
		B	50.827
		C	49.513
		D	47.801
		E	45.694
		F	44.702
		G	43.126
		H	43.196
		I	42.506
		J	42.483
		NR	43.379
9	12	A	52.067
		B	50.369
		C	46.173
		D	43.971
		E	43.167
		F	41.791
		G	41.972
		H	42.575
		I	41.610
		J	42.877
		NR	45.499

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
10	13	A	46.835
		B	50.514
		NR	42.642
11	14	A	46.150
		B	50.407
		C	52.669
		D	49.687
		NR	43.275
12	15	A	45.209
		B	41.551
		C	43.561
		D	46.337
		E	48.775
		F	49.904
		G	51.552
		H	52.176
		I	52.670
		J	52.385
		NR	44.687

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
13	16	A	50.869
		B	46.725
		C	47.653
		D	45.684
		E	42.897
		F	44.960
		G	45.799
		H	46.886
		NR	43.315
14	17	A	50.411
		B	47.107
		C	48.450
		D	45.941
		E	42.621
		F	44.185
		G	43.990
		H	46.473
		NR	44.257
15	18	A	52.379
		B	52.653

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
		C	52.771
		D	49.510
		E	53.558
		F	50.707
		G	42.478
		H	47.221
		I	56.012
		J	50.607
		K	41.850
		NR	42.338
16	19	A	45.197
		B	48.161
		C	48.962
		D	51.745
		E	53.351
		F	54.323
		G	55.122
		H	57.401
		I	43.883
		NR	43.090

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
17	20	A	44.453
		B	46.936
		C	47.601
		D	51.550
		E	54.796
		F	54.526
		G	55.436
		H	55.258
		I	43.895
		NR	43.939
	21	OMIT	
18	22	A	50.966
		B	47.312
		C	48.351
		D	44.383
		E	45.430
		F	44.151
		NR	46.310
19	23	A	49.521
		B	49.960
		C	50.452
		NR	43.676

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
20	24	A	51.719
		B	50.818
		C	44.783
		D	41.246
		E	46.415
		NR	46.740
21	25	A	51.678
		B	50.981
		C	45.064
		D	42.805
		E	46.820
		NR	46.293
22	26	A	50.453
		B	50.342
		C	48.953
		D	49.027
		NR	45.027
23	27	A	45.422
		B	45.102
		C	47.279

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
		D	47.163
		E	53.141
		F	55.690
		G	47.385
		H	47.747
		NR	45.193
24	28	A	44.670
		B	44.975
		C	47.135
		D	47.061
		E	52.754
		F	54.999
		G	47.826
		H	47.762
		NR	44.456
25	29	A	49.822
		B	50.029
		C	49.722
		D	51.279
		E	53.561

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
		F	47.518
		NR	44.288
26	30	A	46.727
		B	48.814
		C	51.482
		D	51.441
		E	48.266
		NR	43.874
	31	A	50.176
		B	45.156
		NR	43.195
	32	A	50.909
		B	43.205
		NR	42.900
	33	A	50.394
		B	47.259
		NR	43.280

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
	34	A	50.170
		B	39.478
		NR	43.464
	35	A	50.253
		B	41.720
		NR	43.652
	36	A	51.008
		B	46.073
		NR	41.586
	37	A	50.578
		B	42.464
		NR	42.834
	38	A	51.271
		B	42.836
		NR	42.304

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
	39	A	50.762
		B	45.752
		NR	44.439
	40	OMIT	
	41	A	45.881
		B	48.479
		C	50.946
		D	53.614
		E	52.664
		NR	42.499
	42	A	44.500
		B	45.905
		C	49.727
		D	52.585
		E	54.432
		NR	42.771

Create The Following Variables By Summing Values for the Items Indicated.

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
27		Sum The Values For 31, 32, 33, 34, 37	
28		Sum the Values for 35, 36, 39, 41, 42.	
		Retain Only Variables 27 and 28 Not Items 31 - 42	
	43	OMIT	
	44	OMIT	
29	45	A	51.664
		B	48.086
		NR	41.703
	46	OMIT	
30	47	A	50.292
		B	50.229
		C	49.302
		D	49.139
		E	50.457
		NR	40.884
31	48	A	50.097
		B	49.003

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
		C	49.421
		D	49.770
		E	49.520
		F	49.337
		G	50.753
		NR	41.127
32	49	A	41.951
		B	44.859
		C	47.074
		D	48.354
		E	53.326
		F	55.973
		NR	43.741
	50	OMIT	
	51	OMIT	
	52	OMIT	
	53	OMIT	
	54	OMIT	
	55	OMIT	
33	56	A	54.563
		B	48.564

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
		C	46.553
		D	46..520
		NR	41.576
34	57	A	47.952
		B	50.358
		C	51.323
		D	51.323
		E	51.523
		F	52.890
		NR	41.231
35	58	A	50.670
		B	52.001
		C	51.808
		D	51.485
		E	49.790
		F	48.803
		G	45.839
		NR	41.771

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
36	59	A	44.013
		B	47.252
		C	46.851
		D	49.602
		E	51.919
		NR	41.587
37	60	A	52.285
		B	50.569
		C	45.184
		D	43.320
		E	46.112
		NR	41.925
38	61	A	48.822
		B	49.731
		C	50.117
		D	50.512
		E	50.127
		F	50.942
		G	49.564
		NR	40.691

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
	62	OMIT	
39	63	A	50.252
		B	50.308
		C	50.062
		D	48.198
		E	46.447
		NR	41.998
	64	OMIT	
	65	OMIT	
	66	OMIT	
	67	OMIT	
	68	OMIT	
69		A	1
		B	0
		C	0
		NR	0
70		A	1
		B	0
		C	0
		NR	0
71		A	1
		B	0

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
		C	0
		NR	0
	72	A	0
		B	1
		C	1
		D	0
		NR	0
	73	A	0
		B	1
		C	1
		D	0
		NR	0
40	Sum the Values for 69, 70, 71, 72, and 73. Retain Variable 40 But Not Items 69 - 73.		

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
	74 - 88	OMIT	
41	89	A	50.796
		B	50.289
		C	49.519
		D	50.720
		E	51.271
		F	48.960
		NR	40.285
42	90	A	51.405
		B	51.251
		C	49.153
		D	47.034
		NR	44.461
43	91	A	56.924
		B	53.821
		C	46.704
		D	42.811
		E	42.144
		NR	41.362

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
	92 - 99	OMIT	
44	100	A	53.546
		B	51.446
		C	46.086
		D	42.736
		E	48.900
		NR	44.933
45	101	A	47.293
		B	49.306
		C	54.050
		NR	40.425
46	102	A	41.557
		B	44.250
		C	51.620
		NR	39.882
47	103	A	45.443
		B	48.238
		C	52.671
		NR	40.659

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATION	CODE
48	104	A	49.838
		B	51.039
		C	50.853
		NR	40.283
49	105	A	47.792
		B	49.745
		C	52.438
		NR	40.437
50	106	A	45.753
		B	50.618
		C	53.535
		NR	40.741
51	107	A	48.003
		B	50.194
		C	51.389
		NR	40.893
52	108	A	48.715
		B	48.858
		C	52.824
		NR	40.812

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
53	109	A	46.651
		B	49.247
		C	53.285
		NR	40.737
54	110	A	43.743
		B	46.201
		C	51.965
		NR	40.993
55	111	A	50.471
		B	51.165
		C	49.774
		NR	41.039
56	112	A	50.773
		B	50.364
		C	50.001
		NR	41.275

APPENDIX A (continued)

VARIABLE NUMBER	QUESTIONNAIRE ITEM NUMBER	ITEM ALTERNATIVE	CODE
57	115	A	51.520
		B	47.161
		C	47.732
		D	47.461
		E	46.433
		F	47.715
		G	43.909
		H	44.178
		I	55.227
		J	48.322
		K	47.849
		NR	40.825

APPENDIX B

Means, Standard Deviations and Intercorrelations of Items From the Twelfth Grade Student Questionnaire*

*The reader will note that the means of the criterion scaled variables are slightly greater than 50. This is because individuals who had smudged an answer to a question or gave more than one answer were included as non-respondents in the criterion scale analysis when the mean of 50 was assigned but their smudged or double responses were eliminated from that particular variable in these computations. Since these people were assigned a low score in the criterion scale analysis, eliminating them would tend to raise the means slightly.

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS 10148.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
1	512765.8633	25160959.000	50.0354	0.6587	0.6587
2	512921.7483	25253427.250	50.0529	2.8256	2.8258
3	513114.3516	25180356.750	50.0611	2.8277	2.8278
4	513150.2500	25207999.250	50.0647	1.5107	1.5108
5	513167.5000	25394411.250	50.0764	4.4346	4.4348
6	512931.5508	25209916.000	50.0529	1.9121	1.9121
7	513281.9258	25259482.250	50.0640	2.8088	2.8090
8	513166.9648	25241360.250	50.0664	2.3316	2.3317
9	512727.8750	25221468.250	50.0326	2.6142	2.6144
10	513108.3594	25196145.750	50.0605	1.2329	1.2330
11	512978.1938	25186177.000	50.0476	1.3512	1.3513
12	512881.4492	25213565.000	50.0479	2.1256	2.1257
13	513208.5742	25233448.500	50.0805	1.7142	1.7143
14	512999.4531	25197525.000	50.0597	1.3214	1.3214
15	515518.1445	25488899.250	50.2606	3.2541	3.2543
16	513431.8203	25346073.750	50.1927	3.4957	3.4959
17	512668.4375	25263626.500	50.0267	3.4091	3.4092
18	513349.5000	25249252.500	50.0945	1.8453	1.8453
19	513161.8711	25183846.000	50.0658	0.5199	0.5199
20	512755.1445	25226590.750	50.0353	2.6594	2.6595
21	513408.8148	25283190.000	50.1003	2.4894	2.4895
22	513217.7617	252 6941.750	50.0814	0.7124	0.7124
23	513623.7734	25368574.500	50.1218	3.5418	3.5420
24	513078.5078	25313909.250	50.0675	3.3979	3.3981
25	512820.7188	25215195.000	50.0807	1.1912	1.1913
26	513016.2148	25213186.750	50.0813	1.6850	1.6851
27	2995340.7813	1.8984170E 09	295.1732	23.3884	23.3895
28	2493390.25	1.6229238E 09	248.1479	20.4309	20.4321
29	513183.7539	25230935.750	50.0780	1.7985	1.7985
30	513162.5273	25199412.500	50.0759	0.5556	0.5557
31	513408.7578	25234552.500	50.1004	0.5965	0.5966
32	513298.2930	25379601.750	50.0894	4.1095	4.1097
33	513421.0195	25349287.000	50.1015	3.5574	3.5576
34	513623.7402	25283932.750	50.1218	1.4597	1.4598
35	513849.2813	25298911.000	50.1442	1.8334	1.8335
36	513539.9141	25273715.000	50.1134	1.9851	1.9852
37	513619.8906	25317479.500	50.1214	2.7383	2.7384
38	513528.6781	25246835.250	50.1223	0.5668	0.5668
39	513571.4297	25242574.250	50.1165	0.7328	0.7328
40	11193.9998	22499.9998	1.1141	0.9991	0.9991
41	513683.3750	25435827.500	50.2370	0.7865	0.7866
42	513442.3781	25440726.500	50.2128	1.2156	1.2157
43	513169.9924	25686206.750	50.2751	4.3238	4.3241
44	513781.1719	25643513.500	50.2359	2.8325	2.8327
45	513195.7586	25684709.750	50.2573	3.0425	3.0426
46	513566.2227	25704539.750	50.2142	2.9130	2.9131

EMP-FACTOR ANALYSIS 12TH GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS 10048.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
47	507662.9936	25732695.250	50.5237	2.8868	2.8870
48	507660.6680	25652591.250	50.5236	0.6126	0.6126
49	507698.4609	25689604.7000	50.5273	1.9181	1.9181
50	507823.8633	25756290.7500	50.5398	3.0090	3.0092
51	507973.9238	25697113.500	50.5547	1.2865	1.2865
52	508022.3672	25726920.250	50.5596	2.0332	2.0333
53	507661.5664	25739813.750	50.5236	2.8375	2.8376
54	508083.4609	25766964.7500	50.5656	2.7394	2.7395
55	508347.4063	25726342.250	50.5919	0.4551	0.4552
56	508211.9438	25706304.000	50.5784	0.4183	0.4183
57	509249.0117	25940306.5000	50.6816	3.6071	3.6073
58	356557.9922	18338792.5000	35.4855	8.0810	8.0814
59	527117.9922	29472223.5000	52.4600	13.4571	13.4577
60	635043.9922	42691593.500	63.2310	15.9498	15.9505
61	723385.9922	55301851.5000	71.9930	17.9101	17.9110
62	531837.9902	31680223.2500	52.9268	18.7523	18.7532

CORRELATION MATRIX ALL VARIABLES

	1	2	3	4	5	6	7
1	1.000000	-0.112394	0.165936	0.054807	0.047938	0.068732	0.064496
2	-0.112291	1.000000	0.085189	0.040671	0.175627	0.111438	0.137536
3	0.166319	0.085189	1.000000	0.114706	0.063630	0.114340	0.107647
4	0.054907	0.040671	0.114706	1.000000	0.059989	0.091220	0.143254
5	0.047938	0.175627	0.060383	0.059985	1.000000	0.272028	0.332575
6	0.068732	0.111438	0.114355	0.091271	0.272031	1.000000	0.648638
7	0.064496	0.137539	0.107657	0.143260	0.332575	0.648638	1.000000
8	0.158663	0.123434	0.123491	0.149431	0.206171	0.234885	0.613113
9	0.063113	0.145624	0.095814	0.116427	0.205701	0.181800	0.454677
10	0.131189	0.108094	0.184099	0.028747	0.079505	0.087783	0.064662
11	0.185091	0.109798	0.141975	0.085466	0.056130	0.085471	0.083492
12	0.128664	0.127395	0.065419	0.072554	0.151945	-0.028272	0.027741
13	0.094717	0.122699	0.164248	0.023634	0.232284	0.084929	0.167252
14	-0.004231	0.124565	0.061761	0.009447	0.166786	0.081866	0.137182
15	0.153871	0.149235	0.090958	0.175030	0.247847	0.140544	0.214752
16	0.139921	0.154378	0.088863	0.192536	0.227533	0.128747	0.241286
17	0.156274	0.153261	0.074 56	0.156636	0.192627	0.128839	0.246877
18	0.171994	0.140598	0.080993	0.048874	0.206235	0.098693	0.185891
19	0.285164	0.020562	0.289324	0.084076	0.098260	0.002353	0.022045
20	0.075222	0.154057	0.112596	0.039535	-0.017540	0.058081	0.051996
21	0.075397	0.137973	0.078282	0.064393	0.015776	0.063214	0.080268
22	0.180131	0.075114	0.266121	0.116911	0.041109	0.132269	0.143169
23	0.173186	0.158659	0.060833	0.136861	0.037150	0.106552	0.155344
24	0.177397	0.149441	0.063008	0.129053	-0.004503	0.086313	0.132497
25	0.113423	0.060259	0.055842	0.029241	0.056708	0.050808	0.075385
26	-0.012256	0.119194	0.112542	0.064128	0.074829	0.091214	0.110744
27	0.057159	0.113878	0.071622	0.086680	0.227895	0.151540	0.166674
28	0.022763	0.121543	0.066356	0.084969	0.171209	0.096758	0.125657
29	0.073826	0.052691	0.072655	0.237307	0.097161	0.110140	0.160282
30	0.186479	0.034958	0.292719	0.077330	0.057504	0.071593	0.056498
31	0.212501	0.062437	0.219037	0.076722	0.025854	0.081501	0.087118
32	0.161827	0.160886	0.066803	0.153579	0.014554	0.104137	0.140940
33	0.069495	0.147934	0.040034	0.130923	0.012488	0.094579	0.160182
34	-0.021656	0.044922	0.119819	0.075097	-0.023742	0.007827	0.017337
35	0.004444	0.064726	0.083961	0.067750	0.107438	0.061857	0.069262
36	-0.064487	0.134561	0.087915	0.058257	0.034961	0.092317	0.084800
37	-0.015766	0.151637	0.083273	0.048849	-0.000142	0.034814	0.031718
38	-0.004124	0.063855	0.269428	0.089734	0.036085	0.112689	0.094589
39	0.017992	0.113734	0.273316	0.044837	0.039921	0.121110	0.080084
40	0.040985	0.026248	-0.015523	0.007779	-0.091340	0.003919	0.013685
41	0.045816	0.122273	0.158639	0.107920	0.036166	0.089936	0.095452
42	0.014103	0.089271	0.087014	-0.011364	0.003706	0.062152	0.066129
43	0.057272	0.167877	0.044429	0.058585	0.032891	0.064432	0.097013
44	0.024795	0.115756	0.042127	0.052275	-0.050720	0.041474	0.061639
45	0.028517	0.084595	0.043392	0.080326	0.057917	0.063566	0.087099
46	-0.042299	0.142799	0.086927	0.055390	0.195188	0.093718	0.112953
47	-0.004436	0.121693	0.092473	0.047523	0.104518	0.094229	0.110163
48	0.190217	0.045293	0.212569	0.072375	0.039347	0.078683	0.059634
49	-0.046596	0.104263	0.064273	0.044891	0.094182	0.072527	0.080202
50	0.038775	0.118714	0.096728	0.057721	0.189705	0.068281	0.086936

CORRELATION MATRIX ALL VARIABLES

	1	2	3	4	5	6	7
51	[illegible]	[illegible]	[illegible]	[illegible]	0.059247	0.054329	0.0596 [illegible]
52	[illegible]	[illegible]	[illegible]	[illegible]	-0.034791	0.043367	[illegible]
53	-0.[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.025[illegible]	[illegible]
54	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
55	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
56	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
57	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
58	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
59	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
60	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
61	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
62	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

CORRELATION MATRIX ALL VARIABLES

	8	9	10	11	12	13	14
1	0.158647	0.063113	0.031189	0.085990	0.028647	0.091710	-0.004259
2	0.123434	0.145621	0.108994	0.109805	0.120495	0.122699	0.134565
3	0.120477	0.095826	0.184199	0.141973	0.065419	0.064231	0.061738
4	0.249481	0.114437	0.028747	0.085466	0.072554	0.023625	0.009447
5	0.216168	0.215710	0.079605	0.056130	0.151945	0.232250	0.166784
6	0.224887	0.181803	0.087783	0.085471	-0.028272	0.084922	0.081865
7	0.613163	0.454677	0.064662	0.083492	0.020745	0.167252	0.137185
8	1.000000	0.580027	0.058545	0.059469	0.055481	0.123413	0.094043
9	0.580027	1.000000	0.061355	0.074120	0.111177	0.145162	0.115300
10	0.058545	0.061355	1.000000	0.148382	0.058285	0.049821	0.031049
11	0.059469	0.074120	0.148382	1.000000	0.087547	0.065213	0.076030
12	0.055481	0.111177	0.058285	0.087547	1.000000	0.171181	0.097470
13	0.123413	0.145162	0.049821	0.065213	0.171181	1.000000	0.436203
14	0.094043	0.115300	0.031049	0.076030	0.097470	0.436203	1.00000
15	0.177677	0.236868	0.064645	0.109005	0.247982	0.176846	0.092411
16	0.240947	0.276157	0.087894	0.123320	0.243795	0.158566	0.099832
17	0.236318	0.279221	0.118719	0.110517	0.226363	0.098021	0.107836
18	0.184527	0.195018	0.049181	0.084790	0.190882	0.584492	0.241174
19	0.152917	0.134117	0.157250	0.147342	0.124848	0.191520	0.078759
20	0.178695	0.199378	0.125784	0.104275	0.084253	0.157754	0.063467
21	0.196545	0.117341	0.079559	0.093962	0.128424	0.124206	0.064436
22	0.125926	0.128136	0.127478	0.147410	0.101644	0.112649	0.154818
23	0.134701	0.171234	0.055753	0.089649	0.169362	0.136621	0.072715
24	0.110461	0.152339	0.054206	0.089160	0.145976	0.061663	0.057730
25	0.082246	0.078562	0.055567	0.122998	0.071409	0.085741	0.080362
26	0.112361	0.137395	0.128235	0.115193	0.119952	0.091135	0.098259
27	0.126374	0.147763	0.060513	0.062751	0.154259	0.156067	0.136679
28	0.104454	0.139439	0.057222	0.087642	0.179270	0.119052	0.107155
29	0.158539	0.147143	-0.004713	0.074168	0.121938	0.049084	0.039583
30	0.062353	0.051197	0.131257	0.118439	0.050749	0.110232	0.085701
31	0.083456	0.064541	0.068463	0.145939	0.064321	0.158440	0.168855
32	0.128134	0.171214	0.058855	0.112950	0.158787	0.062786	0.050593
33	0.147891	0.191173	0.034213	0.090359	0.163341	0.076214	0.055104
34	0.043737	0.054429	0.046663	0.115297	0.074055	0.028298	-0.004025
35	0.078219	0.048189	0.054442	0.078802	0.097991	0.079943	0.038637
36	0.078707	0.112321	0.087448	0.101552	0.066573	0.044908	0.057262
37	0.053269	0.062791	0.083846	0.111821	0.070819	0.046353	0.021076
38	0.105467	0.091733	0.112843	0.145944	0.070198	0.077187	0.052326
39	0.098211	0.099780	0.129078	0.108931	0.065017	0.146134	0.167175
40	0.026955	0.030918	-0.037189	0.057483	0.080925	-0.012108	-0.009579
41	0.086981	0.094514	0.124286	0.101253	0.051528	0.086842	0.055538
42	0.047887	0.077142	0.089467	0.122212	0.127771	0.048455	0.044084
43	0.012708	0.132158	0.056913	0.090344	0.116422	0.047844	0.033876
44	0.059042	0.082326	0.045278	0.105820	0.080256	0.040037	0.018989
45	0.072674	0.076534	0.048503	0.074938	0.069441	0.006863	0.028042
46	0.119162	0.127134	0.094219	0.103978	0.090409	0.086638	0.113041
47	0.084717	0.102367	0.099337	0.077551	0.095117	0.079801	0.069895
48	0.097038	0.054564	0.133059	0.119077	0.048669	0.084824	0.073371
49	0.075626	0.036571	0.005729	0.039793	0.087619	0.074059	0.047083
50	0.067417	0.063537	0.118474	0.051424	0.065980	0.086139	0.078533

CORRELATION MATRIX ALL VARIABLES

	8	9	10	11	12	13	14
51	0.148659	0.139698	0.057383	0.061848	0.039098	0.056062	0.083296
52	0.185535	0.048476	0.087979	0.006624	0.041791	0.017611	0.029[illegible]
53	0.154581	0.073879	0.074543	0.059242	0.077134	0.029511	0.038983
54	0.[illegible]5291	0.[illegible]851	[illegible].74360	[illegible].62215	0.098979	0.080386	0.073056
55	0.175257	0.148426	0.065781	.1551[illegible]2	0.041301	0.089859	0.099282
56	0.[illegible]95[illegible]00	0.[illegible]76[illegible]96	0.091359	0.239262	0.086829	0.143230	0.161079
57	0.134[illegible]78	0.[illegible]6041[illegible]	[illegible].[illegible]039281	0.115823	0.124689	.094222	0.036680
58	0.195471	0.21177[illegible]	[illegible].[illegible]64665	[illegible].077758	0.180278	0.144086	0.118870
59	0.237351	[illegible].25823	0.[illegible]15039	[illegible].[illegible]19521	0.186456	0.150945	0.118485
60	0.227504	0.259[illegible]28[illegible]	0.[illegible]03175	[illegible].115264	0.180195	0.125435	0.[illegible]92745
61	0.194727	[illegible].2[illegible]988[illegible]	0.127632	0.[illegible]08406	0.155[illegible]53	.114791	0.112241
62	[illegible].151[illegible]43	[illegible].185795	[illegible].[illegible]78341	0.074220	0.145447	0.152[illegible]82	0.109549

CORRELATION MATRIX ALL VARIABLES

	16	17	18	19	20	21
1	0.53871	0.058204	0.071974	0.225.64	0.070222	0.0753 7
2	0.149291	0.153261	0.140598	0.20579	0.154961	0.13797
3	0.96949	0.074.48	0.080976	0.289324	0.102596	0.07327.
4	0.175 3	0.192536	0.156636	0.048874	0.084076	0.063399
5	0.247347	0.22753	0.192527	0.206232	0.098260	-0.017538	0.01577
6	0.140544	0.128747	0.128639	0.198686	0.002353	0.058.81	0.0632.4
7	0.214725	0.241284	0.246881	0.185891	0.002.62	0.062.22	0.082.0
8	0.177881	0.24055.	0.236824	0.184520	0.052917	0.080899	0.096545
9	0.226868	0.276159	0.279224	0.195003	0.041410	0.109373	0.117341
10	0.64545	0.087894	0.118719	0.049170	0.157250	0.105084	0.079559
11	0.19.15	0.12132	0.111517	0.084790	0.147342	0.104275	0.093953
12	0.247982	0.243795	0.226367	0.190882	0.124871	0.084258	0.128424
13	0.276848	0.158570	0.098025	0.584492	0.191548	0.057710	0.1242.6
14	0.19240	0.09983	0.17836	0.241164	0.178739	0.063467	0.064436
15	1.00000	0.448177	0.323822	0.238513	0.168813	0.125.04	0.189494
16	0.448177	1.00000	0.541.54	0.200476	0.034.77	0.147231	0.20216.
17	0.323822	0.541054	1.000000	0.129627	-0.014698	0.137184	0.1423.5
18	0.238513	0.2..48	0.129631	1.000000	0.215967	0.088572	0.180448
19	0.168813	0.034377	-0.014698	0.215941	1.000000	0.003635	0.068114
20	0.125364	0.147231	0.137164	0.088367	0.003617	1.000000	0.713014
21	0.189494	0.202161	0.142326	0.180442	0.068114	0.713004	1.0.00.
22	0.2'9.02	.14575.	0.149956	0.139589	0.220486	0.259759	0.229614
23	0.295193	0.347597	0.313649	0.160842	0.130200	0.322487	0.357079
24	0.244984	0.29539.	0.3.1512	0.095748	0.005465	0.354794	0.31.87.
25	0.122587	0.121588	0.14425.	0.064066	0.124859	0.072499	0.093544
26	0.132317	0.179041	0.213636	0.092857	0.082425	0.172257	0.172367
27	0.184362	0.169168	0.153479	0.193507	0.098776	0.069161	0.102984
28	0.214618	0.235438	0.233873	0.136027	0.054.35	0.114214	0.134831
29	0.159435	0.21964.	0.218644	0.079494	0.071530	-0.034908	0.020957
30	0.123557	0.218.46	0.059199	0.053119	0.339526	0.041100	0.046875
31	0.028131	0.216869	0.061845	0.079109	0.208265	0.055565	0.068295
32	0.259.75	0.328192	0.311886	0.087482	0.026727	0.3.9906	0.294355
33	0.239845	0.342954	0.627621	0.131938	0.213561	0.276898	0.251731
34	0.170565	0.115619	0.214802	0.034676	0.123997	0.131749	0.134245
35	0.142088	0.134373	0.129237	0.071125	0.078416	0.121216	0.11638
36	0.15942	0.126247	0.114968	0.089285	0.039490	0.223768	0.2097..
37	0.112534	0.144291	0.138126	0.083054	0.053655	0.549514	0.468370
38	0.086987	0.112071	0.118936	0.099041	0.218707	0.099260	0.098685
39	0.079924	0.124829.	0.056901	0.133992	0.241124	0.111459	0.126759
40	0.77508	0.129024	0.140619	0.096488	-0.14136	0.121920	0.118333
41	0.059832	0.077191	0.074744	0.078275	0.267119	0.067587	0.092423
42	0.124663	0.151917	0.150621	0.075868	0.062108	0.282799	0.198865
43	0.172532	0.281233	0.229713	0.061592	0.040823	0.341826	0.297785
44	0.127279	0.146884	0.147116	0.024158	0.035809	0.392159	0.335162
45	0.117603	0.139662	0.133259	0.028877	0.032389	0.141753	0.126577
46	0.112788	0.11206	0.10327.	0.101768	0.072962	0.102380	0.104652
47	0.132221	0.163037	0.149355	0.081621	0.053942	0.149416	0.137933
48	0.154742	0.151611	0.105266	0.088517	0.332661	0.111195	0.041654
49	0.145410	0.129312	0.124433	0.098637	0.049904	0.094781	0.087857
50	0.113783	0.112187	0.115732	0.056317	0.069663	0.057.23	0.056055

CORRELATION MATRIX ALL VARIABLES

	15	16	17	18	19	20	21
51	0.165678	0.145.3	0.041.59	0.054177	0.103457	0.181069	0.0797.7
52	0.168192	0.18378.	0.095299	0.118675	0.175557	0.157741	0.131092
53	0.1 1467	0.1224.1	0.115897	0.039291	0.060820	0.168667	0.148756
54	0.141519	0.154934	0.144778	0.101699	-0.037879	0.166468	0.156396
55	0.132923	0.111931	0.051.21	0.082737	0.201875	0.026926	0.019411
56	0.174482	0.153341	0.091388	0.065820	0.341850	0.106817	0.107494
57	0.231372	0.258859	0.234615	0.073348	0.313361	0.224200	0.213345
58	0.254784	0.27978.	0.260542	0.152910	0.025407	0.182586	0.174908
59	0.299.5.	0.338645	0.324644	0.158571	0.138871	0.217730	0.2.757.
60	0.311735	0.358848	0.342199	0.142430	0.031002	0.254808	0.234473
61	0.252449	0.269359	0.273631	0.133657	0.030.04	0.234330	0.204085
62	0.247573	0.258089	0.239210	0.145015	0.036037	0.211150	0.190492

CORRELATION MATRIX ALL VARIABLES

	24	25	26	27	28
1	0.177397	0.013223	-0.031250	0.057159	0.022750
2	0.149445	0.060259	0.119189	0.113875	0.121145
3	0.066305	0.055842	0.100524	0.071612	0.066347
4	0.129053	0.029241	0.064128	0.086680	0.084969
5	-0.014503	0.056708	0.074829	0.227893	0.171249
6	0.086313	0.050808	0.091214	0.151540	0.096758
7	0.132497	0.037335	0.107742	0.160671	0.125657
8	0.111461	0.082246	0.112261	0.126374	0.104342
9	0.150309	0.078562	0.137895	0.147763	0.139439
10	0.054206	0.055567	0.128223	0.060510	0.057222
11	0.08916	0.122983	0.115182	0.062751	0.087642
12	0.145976	0.071409	0.119945	0.154059	0.179270
13	0.061668	0.086741	0.091235	0.156072	0.119052
14	0.067730	0.028377	0.098259	0.130679	0.107135
15	0.244982	0.102587	0.132312	0.184362	0.214618
16	0.298392	0.121388	0.179637	0.169168	0.235438
17	0.300511	0.144250	0.203636	0.153476	0.233874
18	0.095752	0.064078	0.092857	0.193507	0.136027
19	0.015465	0.104859	0.082425	0.098776	0.054035
20	0.354794	0.072499	0.172252	0.069158	0.114222
21	0.310874	0.093544	0.172367	0.102984	0.134834
22	0.170665	0.161437	0.257873	0.140764	0.149564
23	0.822663	0.126730	0.166261	0.115085	0.192767
24	1.000000	0.108684	0.173568	0.089364	0.163685
25	0.108684	1.000000	0.112821	0.078888	0.103567
26	0.173572	0.112821	1.000000	0.122930	0.204553
27	0.089364	0.078888	0.122930	1.000000	0.859049
28	0.163685	0.103567	0.204553	0.859049	1.000000
29	0.097902	0.048046	0.083188	0.165410	0.151978
30	0.044671	0.143519	0.088148	0.110767	0.078792
31	0.047637	0.138056	0.099654	0.139038	0.102095
32	0.102934	0.119983	0.164159	0.100399	0.208047
33	0.555481	0.130507	0.164213	0.098765	0.196473
34	0.131682	0.105642	0.197247	0.036252	0.145837
35	0.124862	0.084020	0.092879	0.073022	0.095660
36	0.230361	0.094716	0.178738	0.085695	0.118383
37	0.335337	0.110525	0.158764	0.048723	0.127825
38	0.115567	0.109934	0.175967	0.141962	0.115317
39	0.064271	0.103809	0.140692	0.140806	0.093417
40	0.235269	0.082862	0.089676	0.078208	0.112817
41	0.074198	0.132671	0.083536	0.096588	0.084762
42	0.214269	0.114814	0.145924	0.090812	0.129916
43	0.345166	0.113814	0.138061	0.047567	0.140292
44	0.279592	0.102644	0.131909	0.055943	0.137352
45	0.174726	0.036117	0.087714	0.066464	0.088993
46	0.082162	0.075137	0.114713	0.150609	0.125745
47	0.157776	0.103616	0.154203	0.098892	0.125207
48	0.114607	0.096459	0.058220	0.091996	0.052433
49	0.117927	0.098270	0.114871	0.078395	0.099817
50	0.063579	0.030813	0.067774	0.066702	0.073360

CORRELATION MATRIX ALL VARIABLES

	22	23	24	25	26	27	28
52	0.[illegible]3	0.170659	0.078672	0.088696	0.128410	0.072842	0.067335
53	0.136397	0.165159	0.162889	0.085883	0.124463	0.131316	0.094639
54	0.190236	0.17989	0.180356	0.096326	0.137618	0.159521	0.112505
55	0.118.23	0.147681	0.146301	0.074255	0.163744	0.115204	0.13679.
56	0.222917	0.206914	0.205067	0.138168	0.177195	0.096945	0.0261.2
57	0.423139	0.380254	0.371838	0.137410	0.145421	0.165422	0.112836
58	0.416579	0.425639	0.423247	0.113203	0.154459	0.185623	0.174247
59	0.227.64	0.251531	0.233782	0.074198	0.097416	0.164803	0.17439.
60	0.254637	0.323685	0.307555	0.113051	0.157633	0.142317	0.177976
61	0.[illegible]4699	0.344152	0.33372[illegible]	0.115239	0.165835	0.126739	0.167767
62	0.159255	0.277915	0.257045	0.117712	0.168825	0.133536	0.164827
	0.143642	0.295969	0.283605	0.092020	0.094913	0.114056	0.133059

CORRELATION MATRIX ALL VARIABLES

	29	30	31	32	33	34	35
1	0.173865	0.186471	0.212437	0.161827	0.069495	-0.011656	0.042444
2	0.152791	0.134958	0.062437	0.168886	0.147904	0.044922	0.064708
3	0.172628	0.292719	0.218987	0.066795	0.040126	0.109819	0.083901
4	0.237307	0.377331	0.076722	0.153579	0.130923	0.075097	0.067759
5	0.097161	0.075154	0.425845	0.014554	0.012486	-0.023742	0.107438
6	0.131133	0.071591	0.081539	0.104137	0.094579	0.007836	0.061857
7	0.050280	0.056514	0.087118	0.140940	0.160103	0.017243	0.069224
8	0.168539	0.052378	0.093056	0.128137	0.147891	0.043739	0.075213
9	0.147113	0.051197	0.084541	0.171216	0.191173	0.054429	0.081890
10	-0.004713	0.161257	0.088429	0.058855	0.034813	0.046674	0.054442
11	0.074558	0.118439	0.145939	0.112951	0.090459	0.115297	0.078824
12	0.121038	0.160749	0.064321	0.156787	0.163341	0.174063	0.097991
13	0.049097	0.111258	0.158447	0.062786	0.076218	0.028308	0.079958
14	0.139513	0.178570	0.158803	0.050593	0.055114	-0.004025	0.038647
15	0.159437	0.213557	0.028019	0.259677	0.259845	0.070655	0.142692
16	0.219637	0.184841	0.016847	0.328195	0.342954	0.115609	0.134377
17	0.218644	0.159199	0.061832	0.311885	0.327621	0.114802	0.129257
18	0.179501	0.153143	0.079109	0.087486	0.101938	0.034685	0.071162
19	0.171531	0.139526	0.238185	0.026727	0.013561	0.124031	0.078416
20	-0.014073	0.124113	0.015551	0.309964	0.276898	0.131756	0.121216
21	0.120957	0.146875	0.068293	0.284353	0.260731	0.134250	0.116363
22	0.148145	0.129045	0.299643	0.161689	0.152871	0.184689	0.115896
23	0.114231	0.036843	0.052555	0.690050	0.560867	0.131678	0.129836
24	0.197922	0.144877	0.047637	0.702934	0.555481	0.131687	0.124861
25	0.148146	0.143519	0.138021	0.119983	0.130507	0.105642	0.084036
26	0.083195	0.088148	0.099654	0.164163	0.164017	0.197257	0.092867
27	0.165419	0.111767	0.139638	0.100399	0.098765	0.036252	0.073522
28	0.151978	0.078795	0.102095	0.208047	0.196473	0.145840	0.095663
29	1.000000	0.056593	0.075255	0.127830	0.144748	0.046203	0.046279
30	0.056593	1.000000	0.166111	0.046287	0.039347	0.089696	0.066408
31	0.075278	0.166111	1.000000	0.081060	0.063392	0.130348	0.069567
32	0.127831	0.046287	0.081060	1.000000	0.662023	0.178266	0.164471
33	0.144748	0.039347	0.063380	0.662023	1.000000	0.153984	0.157761
34	0.046203	0.089665	0.130323	0.178262	0.153984	1.000000	0.095424
35	0.046279	0.066408	0.069544	0.164471	0.157757	0.095424	1.000000
36	0.039367	0.132955	0.088222	0.305395	0.272534	0.151970	0.132714
37	-0.004421	0.084981	0.092012	0.393306	0.344881	0.185581	0.151643
38	0.057875	0.139532	0.187288	0.156938	0.149343	0.198884	0.118384
39	0.124545	0.215033	0.188395	0.102517	0.072690	0.107613	0.122660
40	0.142465	-0.021827	0.034271	0.231418	0.243272	0.122302	0.065272
41	0.081549	0.255176	0.260285	0.089823	0.102482	0.088548	0.061026
42	0.120145	0.178445	0.181868	0.244436	0.232671	0.087314	0.115525
43	0.102182	0.140544	0.080288	0.396894	0.389102	0.171291	0.130294
44	0.131105	0.140872	0.083416	0.312865	0.287169	0.143329	0.104949
45	0.078733	0.153484	0.037315	0.206685	0.170208	0.118332	0.065846
46	0.137889	0.159028	0.115216	0.124657	0.081969	0.053423	0.082549
47	0.166704	0.169226	0.090428	0.205587	0.199659	0.118543	0.093132
48	0.192053	0.236748	0.200785	0.038289	0.020688	0.065389	0.073374
49	0.124748	0.136469	0.065214	0.159960	0.157530	0.114417	0.087397
50	0.134384	0.067501	0.088807	0.095324	0.055674	0.041555	0.043040

CORRELATION MATRIX ALL VARIABLES

	29	30	31	32	33	34	35
31	[illegible]	0.088655	0.119473	0.078499	0.[illegible]83	0.053151	0.065035
32	[illegible]	0.173423	0.078873	0.207575	0.139879	0.143387	0.074963
33	0.[illegible]	0.160977	0.092294	0.224563	0.202964	0.150951	0.093871
34	0.[illegible]	0.[illegible]	0.081593	0.179320	0.168756	0.076669	0.084065
35	0.[illegible]	0.241119	0.212675	0.127640	0.[illegible]2520	0.081[illegible]	0.076684
36	0.[illegible]	0.329481	0.398919	0.108970	0.381240	0.169181	0.074260
37	0.[illegible]	0.[illegible]	0.039429	0.535920	0.488336	0.183646	0.126747
38	0.[illegible]	0.[illegible]	0.046224	0.286212	0.249772	0.760557	0.11[illegible]344
39	0.[illegible]	0.[illegible]	0.[illegible]	0.374184	0.[illegible]	0.135777	0.142745
60	0.[illegible]	0.027737	0.[illegible]	0.408255	0.359766	0.188901	0.154028
61	0.[illegible]	0.[illegible]	0.052005	0.334624	0.290738	0.172871	0.136330
62	0.116777	0.[illegible]31624	0.[illegible]37152	0.331643	0.285900	0.160108	0.168833

CORRELATION MATRIX ALL VARIABLES

	36	37	38	39	40	41	42
1	-0.154487	-0.005766	-0.034124	0.107949	0.040985	0.045816	0.104[illegible]
2	0.134561	0.151657	0.063855	0.113734	0.026248	0.122273	0.08927[illegible]
3	0.087[illegible]	0.098327	0.269375	0.273275	-0.005523	0.158639	0.087615
4	0.058349	0.048849	0.089734	0.144815	0.037779	0.107926	-0.010364
5	0.134959	-0.060147	0.036083	0.039913	-0.091340	0.036066	0.003716
6	0.092[illegible]	0.134814	0.112689	0.221092	0.033919	0.089936	0.052[illegible]
7	0.084[illegible]	0.021718	0.094589	0.068084	0.010083	0.095063	0.066129
8	0.087[illegible]	0.053272	0.096462	0.098213	0.016956	0.086995	0.047896
9	0.053251	0.006279	0.091715	0.099786	0.050918	0.094528	0.077150
10	0.087439	0.083846	0.112845	0.129051	-0.037189	0.124286	0.080467
11	0.121553	0.111821	0.145944	0.108931	0.057483	0.101253	0.122212
12	0.066067	0.070822	0.070298	0.096001	0.080925	0.051506	0.127774
13	0.044918	0.046359	0.077213	0.146334	-0.012108	0.086842	0.048407
14	0.057262	0.041576	0.052325	0.167149	-0.009579	0.055588	0.044084
15	0.115938	0.112034	0.086987	0.079924	0.077008	0.069232	0.124663
16	0.126248	0.144291	0.112071	0.048283	0.129024	0.077190	0.151917
17	0.114165	0.138120	0.118936	0.056890	0.140607	0.074734	0.160624
18	0.096285	0.083059	0.099065	0.133992	0.006483	0.078292	0.076868
19	0.139466	0.053653	0.218707	0.241059	-0.014136	0.267119	0.062048
20	0.221763	0.549514	0.099267	0.111459	0.121929	0.067587	0.202794
21	0.209703	0.468374	0.098703	0.126750	0.118333	0.092420	0.198874
22	0.157958	0.188054	0.315579	0.229158	0.069319	0.248312	0.180833
23	0.226857	0.321526	0.116275	0.070805	0.276352	0.087893	0.217689
24	0.231641	0.335337	0.115567	0.064261	0.295269	0.074198	0.214169
25	0.094716	0.110532	0.109934	0.103809	0.082862	0.132671	0.114314
26	0.178738	0.158764	0.175993	0.140692	0.089676	0.083255	0.145956
27	0.085695	0.048723	0.141962	0.140794	0.078208	0.096538	0.090019
28	0.118[illegible]	0.127817	0.115317	0.093403	0.112817	0.084760	0.12991[illegible]
29	0.119[illegible]	-0.002415	0.057901	0.024826	0.042465	0.081667	0.010140
30	0.032955	0.084903	0.189302	0.214972	-0.021827	0.255106	0.108418
31	0.088222	0.092027	0.187288	0.188395	0.004271	0.200358	0.101902
32	0.315392	0.393316	0.156938	0.102508	0.231418	0.089823	0.244436
33	0.272534	0.344881	0.149343	0.072680	0.243272	0.102482	0.232671
34	0.151962	0.185581	0.198854	0.197580	0.122302	0.088548	0.087314
35	0.132707	0.151643	0.118384	0.122582	0.065272	0.061628	0.115525
36	1.000000	0.333327	0.213120	0.218214	0.094382	0.114129	0.174198
37	0.333322	1.000000	0.206492	0.161900	0.159524	0.131048	0.249907
38	0.213099	0.206492	1.000000	0.215133	0.049125	0.227725	0.121235
39	0.218214	0.161900	0.215193	1.000000	0.019256	0.194345	0.091029
40	0.094382	0.159523	0.049125	0.019256	1.000000	0.004906	0.226756
41	0.114129	0.131066	0.227725	0.194302	0.004906	1.000000	0.091731
42	0.174188	0.249907	0.121235	0.091031	0.226756	0.091730	1.000000
43	0.190539	0.412112	0.044755	0.019325	0.196917	0.085985	0.303274
44	0.195624	0.442508	0.074392	0.081695	0.163437	0.076179	0.270143
45	0.095722	0.147396	0.019104	0.018090	0.057172	0.061271	0.085969
46	0.170058	0.112462	0.130135	0.166086	-0.025615	0.067361	0.082595
47	0.169148	0.180854	0.117415	0.107254	0.049726	0.090282	0.134811
48	0.032142	0.065412	0.126274	0.133192	-0.012784	0.239351	0.038825
49	0.123728	0.126774	0.103776	0.078581	0.058731	0.088352	0.102978
50	-0.026257	0.014159	0.009060	0.005236	-0.035412	0.064801	0.014726

CORRELATION MATRIX ALL VARIABLES

	36	37	38	39	40	41	42
51	0.116131	0.085263	0.093809	0.109663	0.014023	0.085178	0.114983
52	0.154216	0.198766	0.043723	0.116762	0.063332	0.090347	0.139333
53	0.163033	0.209392	0.078054	0.078928	0.078983	0.095241	0.125707
54	0.208161	0.180087	0.089229	0.107261	0.035351	0.046952	0.151225
55	0.116995	0.055495	0.096362	0.244075	-0.012970	0.200709	0.047485
56	0.120159	0.164426	0.231826	0.253731	0.048457	0.306342	0.181919
57	0.234257	0.309244	0.126828	0.085178	0.189842	0.108350	0.155623
58	0.147315	0.187466	0.042509	0.044613	0.048379	0.046371	0.099722
59	0.159658	0.217448	0.034319	0.039867	0.053971	0.053217	0.087272
60	0.179132	0.266643	0.052431	0.032479	0.058681	0.075536	0.089152
61	0.190709	0.248344	0.088242	0.062352	0.032982	0.090632	0.080934
62	0.153291	0.201836	0.014159	0.037775	0.056101	0.039553	0.089174

CORRELATION MATRIX ALL VARIABLES

	43	44	45	46	47	48	49
1	0.157378	0.124795	0.126617	-0.042312	-0.034449	0.180117	-0.046615
2	0.167877	0.115791	0.084595	0.142802	0.121693	0.045308	0.104265
3	0.044479	0.042127	0.043392	0.086927	0.092473	0.212526	0.064270
4	0.058545	0.052275	0.089326	0.055390	0.047523	0.072375	0.044910
5	0.182391	-0.058721	0.057917	0.195188	0.104518	0.139347	0.094182
6	0.144432	0.141474	0.068566	0.093713	0.094229	0.078682	0.072527
7	0.197.15	0.162029	0.087102	0.112953	0.110160	0.059634	0.080260
8	0.1 2778	0.159045	0.072677	0.119066	0.084717	0.057156	0.075622
9	0.132459	0.182326	0.076537	0.127137	0.102367	0.054564	0.085715
10	0.156913	0.145278	0.048507	0.094219	0.099137	0.133159	0.065729
11	0.090364	0.105827	0.074938	0.103978	0.077231	0.110047	0.039795
12	0.1 6527	0.108326	0.069441	0.093409	0.095117	0.148669	0.087619
13	0.147849	0.140642	0.096803	0.086638	0.079801	0.084847	0.074059
14	0.133876	0.118989	0.028048	0.113041	0.069895	0.073371	0.047085
15	0.172537	0.127282	0.117303	0.112788	0.132220	0.054743	0.115420
16	0.231213	0.146886	0.139661	0.112760	0.163137	0.051611	0.129312
17	0.229717	0.147146	0.133259	0.103270	0.149354	0.050266	0.124432
18	0.061592	0.024163	0.028877	0.101773	0.081621	0.080539	0.098644
19	0.040223	0.035809	0.032089	0.072962	0.063942	0.332661	0.049904
20	0.141824	0.392159	0.141750	0.102389	0.149412	0.011195	0.094781
21	0.297783	0.335182	0.126579	0.104652	0.137933	0.041654	0.087862
22	0.084281	0.126125	0.054791	0.094659	0.125315	0.199039	0.127648
23	0.339628	0.265839	0.172247	0.104086	0.170440	0.034522	0.124052
24	0.345166	0.279592	0.174725	0.082162	0.157776	0.014607	0.117927
25	0.113814	0.102252	0.036124	0.075137	0.103616	0.096459	0.098270
26	0.138661	0.131914	0.087714	0.114718	0.154003	0.058645	0.114879
27	0.047567	0.055948	0.066467	0.150609	0.098892	0.091998	0.078399
28	0.140291	0.137354	0.088993	0.125743	0.125207	0.052403	0.099817
29	0.052182	0.031611	0.078733	0.057889	0.066704	0.092053	0.024748
30	0.040544	0.040888	0.053484	0.059028	0.069226	0.226748	0.064691
31	0.030298	0.038343	0.037328	0.115216	0.090428	0.200785	0.065214
32	0.396894	0.312865	0.206685	0.124657	0.205587	0.038289	0.159960
33	0.389.12	0.287169	0.170218	0.081969	0.199659	0.020688	0.157530
34	0.174287	0.143329	0.118327	0.053417	0.118537	0.065389	0.114417
35	0.130291	0.104949	0.065846	0.082544	0.093127	0.073374	0.087397
36	0.190542	0.195329	0.095726	0.170653	0.169043	0.032143	0.123728
37	0.412112	0.442560	0.147396	0.112457	0.180854	0.065412	0.126774
38	0.144755	0.074393	0.019119	0.130135	0.117399	0.126274	0.103776
39	0.119383	0.081707	0.018101	0.166086	0.107254	0.133192	0.078599
40	0.196917	0.163437	0.057172	-0.025615	0.049726	-0.012784	0.058731
41	0.285985	0.276179	0.061271	0.067361	0.090282	0.239351	0.088352
42	0.313174	0.270142	0.085969	0.082595	0.134811	0.038825	0.102978
43	1.000000	0.466513	0.214915	0.072260	0.198202	0.017632	0.167908
44	0.466513	1.000000	0.155734	0.110855	0.165113	0.014084	0.128429
45	0.214915	0.155734	1.000000	0.132844	0.181441	0.012963	0.096585
46	0.072260	0.110855	0.132844	1.000000	0.221884	0.060235	0.142725
47	0.198202	0.165113	0.181441	0.221884	1.000000	0.031811	0.220886
48	0.017632	0.014084	0.012963	0.060235	0.031811	1.000000	0.034560
49	0.167908	0.128434	0.096585	0.142725	0.220881	0.034560	1.000000
50	0.135265	0.074657	0.134259	0.119813	0.144326	0.109362	0.108302

CORRELATION MATRIX ALL VARIABLES

	43	44	45	46	47	48	49
51	0.122522	0.098751	0.052647	0.149300	0.220007	0.093611	0.114357
52	0.282797	0.226121	0.138939	0.118868	0.258661	0.011506	0.174540
53	0.271695	0.212121	0.183835	0.144019	0.265130	0.029817	0.184884
54	0.197597	0.184134	0.142419	0.251414	0.320998	-0.034843	0.222462
55	-0.013628	0.014457	-0.019961	0.048864	0.128100	0.167937	0.018525
56	0.123171	0.141514	0.055696	0.104338	0.125475	0.291093	0.085465
57	0.331573	0.264734	0.173183	0.120401	0.193512	0.034771	0.171131
58	0.289119	0.182022	0.234571	0.239178	0.197310	0.035087	0.137721
59	0.374768	0.252522	0.287409	0.248358	0.242878	0.017412	0.169745
60	0.443147	0.291927	0.350815	0.264389	0.277223	0.042802	0.188649
61	0.351597	0.249503	0.293293	0.295886	0.276500	0.034697	0.180728
62	0.332813	0.196342	0.199454	0.168326	0.195740	0.027973	0.132576

CORRELATION MATRIX ALL VARIABLES

	50	51	52	53	54	55	56
1	0.[illegible]8775	0.069852	0.086982	-0.015881	-0.060974	0.215[illegible]	0.420792
2	0.118714	0.062197	0.076195	0.106986	0.153068	0.041186	0.039173
3	0.167279	0.118416	0.072766	0.049249	0.037702	0.184248	0.322208
4	0.057721	0.023133	0.049815	-0.064624	0.045174	0.021565	0.087561
5	0.189715	0.059147	-0.034791	-0.020378	0.143588	0.081982	0.026194
6	0.168281	0.054319	0.043367	0.025301	0.101480	0.087768	0.065638
7	0.086936	0.050609	0.034923	0.037820	0.112465	0.084810	0.074008
8	0.067141	0.048667	0.055350	0.054581	0.105290	0.075257	0.095026
9	0.168557	0.039698	0.048476	0.073875	0.108507	0.048426	0.076196
10	0.118474	0.057383	0.087971	0.074543	0.074360	0.057815	0.090359
11	0.050418	0.061834	0.060624	0.059242	0.062209	0.155061	0.230262
12	0.165980	0.039198	0.041791	0.077134	0.098979	0.041275	0.086829
13	0.086139	0.056073	0.017611	0.029510	0.080386	0.089859	0.143230
14	0.078583	0.083296	0.021982	0.030983	0.073044	0.099240	0.161059
15	0.103783	0.065608	0.068192	0.101464	0.141310	0.032907	0.074482
16	0.112187	0.045024	0.083776	0.122411	0.154932	0.011931	0.053342
17	0.115729	0.141159	0.095296	0.115895	0.144775	0.051021	0.091388
18	0.156322	0.054187	0.018675	0.038291	0.101699	0.082767	0.065852
19	0.069569	0.103424	0.075534	0.060803	-0.007397	0.201770	0.341853
20	0.057023	0.081669	0.157741	0.168664	0.166464	0.026925	0.176817
21	0.156055	0.179727	0.131087	0.148747	0.166396	0.019411	0.107494
22	0.156462	0.153513	0.136580	0.090236	0.118123	0.221907	0.423139
23	0.074213	0.079659	0.155156	0.178890	0.147680	0.036914	0.080271
24	0.163579	0.079672	0.162881	0.181353	0.146298	0.005167	0.071838
25	0.050813	0.088683	0.085880	0.096319	0.074248	0.138168	0.137413
26	0.167779	0.128212	0.124463	0.137608	0.163744	0.077695	0.145821
27	0.066702	0.072842	0.031016	0.059521	0.115204	0.096945	0.165422
28	0.173361	0.167335	0.084636	0.102564	0.136789	0.026102	0.112866
29	0.124386	0.041118	0.025482	0.063742	0.036043	0.070696	0.100771
30	0.067501	0.088653	0.073425	0.060961	0.019015	0.241020	0.329481
31	0.098807	0.119502	0.078873	0.092294	0.081591	0.212675	0.399019
32	0.095324	0.098499	0.207575	0.224563	0.179518	0.027640	0.118984
33	0.155674	0.078839	0.139879	0.202904	0.168753	0.002505	0.081256
34	0.041551	0.053051	0.143378	0.150945	0.076662	0.081373	0.169140
35	0.043040	0.065035	0.074956	0.093866	0.084658	0.076654	0.074260
36	-0.126250	0.118138	0.154215	0.163033	0.208061	0.116990	0.120089
37	0.014156	0.085261	0.198762	0.209388	0.180280	0.055475	0.164466
38	0.089067	0.093809	0.043701	0.078054	0.089229	0.096062	0.231816
39	0.005236	0.109689	0.116762	0.078928	0.107261	0.244075	0.253812
40	-0.135413	0.114023	0.063332	0.078983	0.035351	-0.012970	0.048457
41	0.076401	0.085178	0.090331	0.095230	0.146952	0.200640	0.306342
42	0.014713	0.114982	0.139323	0.125700	0.151225	0.047485	0.181919
43	0.135265	0.122624	0.282793	0.271695	0.197094	-0.013628	0.123171
44	0.174554	0.093744	0.226197	0.212121	0.184131	0.014438	0.141514
45	0.134259	0.052641	0.138935	0.183632	0.142416	-0.019979	0.055696
46	0.119813	0.149301	0.118864	0.144016	0.251414	0.048864	0.104338
47	0.144323	0.220037	0.258661	0.265139	0.320895	0.028081	0.125496
48	0.119362	0.093581	0.111506	0.029817	-0.034857	0.167848	0.291190
49	0.118312	0.114357	0.174534	0.184884	0.222457	0.018496	0.085496
50	1.000000	0.115630	0.092544	0.127966	0.122843	0.025251	0.055366

CORRELATION MATRIX ALL VARIABLES

	50	51	52	53	54	55	56
50	0.115630	1.000000	0.196979	0.167347	0.228031	0.089952	0.207497
51	0.092548	0.196984	1.000000	0.307829	0.204188	0.005995	0.160982
53	0.127966	0.167347	0.307829	1.000000	0.221572	0.024812	0.098227
54	0.122843	0.228031	0.204189	0.221572	1.000000	-0.027696	0.106585
55	0.025251	0.089952	0.005995	0.024812	-0.027696	1.000000	0.367975
56	0.055066	0.207497	0.160982	0.098227	0.106585	0.367844	1.000000
57	0.175771	0.165752	0.171599	0.214729	0.165443	-0.000500	0.059543
58	0.209537	0.109516	0.128099	0.197273	0.214923	0.021693	0.018379
59	0.261492	0.183033	0.189397	0.244621	0.232289	0.013551	0.025056
60	0.343697	0.199818	0.216269	0.299341	0.268727	0.016365	-0.000418
61	0.284516	0.144198	0.181097	0.274404	0.275930	0.030838	0.002783
62	0.221332	0.098848	0.168227	0.195388	0.206969	0.018536	0.033846

CORRELATION MATRIX ALL VARIABLES

	57	58	59	60	61	62
1	-0..14328	0.018563	0.125235	-0.003766	-0.086994	0.154025
2	0.197371	.251477	0.238572	0.279924	0.270261	0.200156
3	0.146 99	0.043081	0.054533	.0.044173	0.057479	0.044103
4	0.118.72	0.159111	0.143496	.0.179905	0.125801	0.085207
5	0.037271	0.373557	0.4.2796	.0.374342	0.335591	0.349454
6	0. 74871	0.144654	0.181952	0.167942	0..47506	0.138649
7	0.129019	0.238189	0.280462	0.269347	0.222585	0.199243
8	0.134.78	0.196471	0.237311	0.227604	0.194727	0.151143
9	0.160467	0.211771	0.258231	0.250286	0.219879	0.185795
10	0.089275	0.064662	0.105039	0.103.73	0.127632	0.078343
11	0.115818	0.077756	0.118521	0.115264	0.108404	0.074219
12	0.124686	0.180278	0.186457	0.180196	0.155053	0.145447
13	0.042282	0.144084	0.151546	0.125436	0.114791	0.152082
14	0.086686	0.118868	0.118486	0.092745	0.112239	0.109549
15	0.211372	0.254783	0.288157	0.319734	0.252448	0.247373
16	0.268857	0.279781	0.338644	0.358848	0.288357	0.258086
17	0.234618	0.26054.	0.324644	0.340199	0.273631	0.239203
18	0.173848	0.15291	0.158571	0.142439	0.133656	0.145015
19	0.013361	0.025421	0.038875	0.031002	0.030699	0.036337
20	0.224397	0.182579	0.217733	0.254608	0.234529	0.210156
21	0.213342	0.174908	0.207573	0.234472	0.234.84	0.190492
22	0.116309	0.027159	0.054637	0.045987	0.059255	0.043642
23	0.415639	0.251529	0.323885	0.344152	0.277915	0.295969
24	0.423238	0.233782	0.307555	0.330720	0.257.45	0.283600
25	0.113273	0.074198	0.1.3.52	0.115239	0.117712	0.092026
26	0.154459	0.097414	0.157634	0.165835	0.168825	0.094913
27	0.085023	0.064821	0.142307	0.126739	0.133535	0.114056
28	0.174246	0.17439.	0.177973	0.167787	0.164826	0.133059
29	0.117779	0.165448	0.158136	0.162102	0.121435	0.116777
30	0.026342	0.02683	0.024.14	0.027737	0.028112	0.031632
31	0.039417	0..46224	0.046629	0.036081	0.052.05	0.037152
32	0.535918	0.286211	0.374184	0.408255	0.334623	0.331643
33	0.498236	0.249771	0.31533.	0.359766	0.290738	0.285906
34	0.183646	0.060554	0.135776	0.188900	0.172869	0.060107
35	0.126743	0.110342	0.142744	0.154028	0.136328	0.168632
36	0.234257	0.147313	0.159659	0.179133	0.196708	0.153291
37	0.339242	0.187465	0.207448	0.266643	0.248343	0.201836
38	0.026816	0.042514	0.034319	0.052428	0.088241	0.014156
39	0.085.78	0.044613	0.039867	0.032479	0.062352	0.037775
40	0.129542	0.048379	0.053970	0.058681	0.032982	0.056171
41	0.118341	0.046367	0.053217	0.075536	0.090632	0.039553
42	0.155023	0.099719	0.087272	0.089152	0.080931	0.089174
43	0.331573	0.289109	0.374768	0.443047	0.351596	0.332813
44	0.264733	0.182023	0.252322	0.291927	0.249502	0.196342
45	0.273181	0.2.457.	0.287409	0.353815	0.293293	0.199454
46	0.120401	0.239177	0.248358	0.264389	0.295886	0.168326
47	0.193512	0.197509	0.242878	0.277223	0.276500	0.195740
48	0.034767	0.035087	0.017412	0.042799	0.034693	0.027973
49	0.171.27	0.137719	0.169745	0.188649	0.180726	0.132575
50	0.073769	0.209529	0.261492	0.303190	0.284615	0.201331

CORRELATION MATRIX ALL VARIABLES

	57	58	59	60	61	62
51	0.157215	0.169814	0.088309	0.099818	0.104196	0.098846
52	0.171595	0.128099	0.189398	0.206869	0.181697	0.168227
53	0.214729	0.197272	0.244621	0.299341	0.274404	0.195388
54	0.165443	0.214923	0.232280	0.268027	0.275930	0.206969
55	-0.000515	0.021692	0.013555	0.016365	0.030838	0.018536
56	0.059526	0.018371	0.025056	-0.000418	0.002776	0.033846
57	1.000000	0.265236	0.332792	0.388548	0.331907	0.265748
58	0.265237	1.000000	0.598252	0.606448	0.583925	0.564167
59	0.332792	0.598252	1.000000	0.805671	0.706341	0.601657
60	0.388548	0.606448	0.805671	1.000000	0.797777	0.580822
61	0.331907	0.583925	0.706341	0.797777	1.000000	0.539459
62	0.265748	0.564166	0.601657	0.580822	0.539459	1.000000

APPENDIX C

Varimax Factors for the Twelfth Grade Student Questionnaire

VARIMAX FACTORS

	1	2	3	4	5	6	7
3	0.452974	0.036415	0.075497	-0.019868	0.037556	0.016032	0.187079
4	0.17..98	0.078743	0.395196	-0.025541	0.100899	0.110627	0.034099
7	0.298.67	0.034476	0.503362	-0.081760	-0.126661	0.072132	0.055927
10	0.176026	0.079440	0.077869	-0.099054	0.050376	0.003865	0.022782
12	-0.053287	-0.017897	0.298064	-0.044222	-0.250565	0.076787	-0.010093
13	0.112446	0.033498	0.092104	-0.044554	-0.846774	0.028516	0.013531
14	0.291964	-0.008564	0.015224	-0.074425	-0.623654	0.041528	-0.065...
15	-0.003501	0.071038	0.625644	-0.076988	-0.171954	0.168575	0...5119.
16	-0.010372	0.067985	0.711989	-0.074330	-0..86616	0.236351	-0.011458
17	0..57522	0..32018	0.662569	-0.075151	0.002696	0.231345	-0.059659
18	0..24583	0.077610	0.182795	-0.029745	-0.755992	0.035860	0.117946
19	0.464415	-0.022115	-0.055389	-0.038521	-0.209.04	-0.009499	0.087441
20	0.023244	0.836786	..025875	-0.048336	-0..48978	0.181997	0.054073
21	0..24240	0.79055e	..098524	-0.011744	-0.148991	0.158598	0.060127
22	0.537321	0.164493	0.075092	-0.029371	-0.061264	0.085209	0.104128
23	0.030539	0.184121	0.159508	-0.050518	-0.115953	0.830888	-0.003013
24	0.030652	0.191404	0.105592	-0.052412	-0.039457	0.848663	-0.007981
25	0.282455	0.312104	0.176308	-0.120803	-0.033818	0.046431	0.061547
26	0.088555	0.100984	0.113997	-0.145525	-0.049853	0.072682	0.055524
28	0.033603	0.034336	0.294375	-0.111114	-0.126982	0.096309	0.030037
31	0.582428	0.006873	-0.052787	-0.104328	-0.128219	0.033137	-0.047749
32	0.185165	0.162166	..146074	-0..167257	-0.002066	0.833727	0.076855
33	0.031525	0.141666	0.212091	-0.154797	-0.012227	0.716236	0.091528
34	0.132586	0.107509	-0.016281	-0.149693	0.052353	0.095867	0.063756
35	0..73780	0.108044	0.270189	-0.124480	-0.005120	0.031579	0.348644
36	0.127686	0.184668	-0.002292	-0.243298	-0.007347	0.246940	0.544484
37	0.093818	0.373954	-0.008097	-0.159512	0.021471	0.262247	0.229226
38	0.289546	0.013790	0.049493	-0.041524	0.015716	0.097528	0.463335
39	0.357944	0.056015	-0.018136	-0.115065	-0.160668	0.021254	0.477414
41	0.002494	0.071257	0.078113	0.020513	0.071402	0.242094	0.014546
43	0.503473	0.051819	0.085801	-0.085852	0.011362	0.061129	0.121757
42	0.151509	0.256829	0.133952	-0.145140	0.026677	0.127554	0.076593
43	0..47591	0.453112	0.161675	-0..345274	0.045255	0.298317	-0.138811
44	0.089960	0.577656	0.085882	-0.260590	0.055412	0.167277	-0.036573
45	0.005577	0.166557	0.137310	-0.343961	0..41803	0.148411	-0.186005
46	0.040602	0.112854	0.110512	-0..431910	-0.113219	0.013050	0.249855
47	0.040019	0.034143	0.087882	-0.608190	-0.042390	0.100498	0.069779
48	0.494917	-0.012581	0.046545	0.019983	-0.033721	0.030692	-0.069434
49	0.014253	-0.007539	0.100842	-0.455276	-0.062018	0.063227	0.115249
50	0.1 1942	0.033868	0.129985	-0.323178	-0.069258	0.041578	-0.447569
51	0.231446	-0.015594	-0.058106	-0.445937	-0.036481	0.016851	-0.012217
52	0.176016	0.132830	-0.002257	-0.548288	0.045937	0.131153	-0.052993
53	0.047574	0.129661	-0.000045	-0.563766	0.020771	0.144276	-0.048488
54	-0.050461	0.116587	0.121804	-0.580027	-0.176467	0.029257	0.151228
55	0.598984	-0.009929	..055531	..049608	-0.054491	-0.038.54	0.056038
56	0.740 86	0.079624	-0.014554	-0.120946	-0.050858	0.015408	0.002017
57	0.017423	0.111869	0.153218	-0.230116	0.017102	0.585701	0.117235

EMP-FACTOR ANALYSIS 12TH GRADE

VARIMAX FACTORS

	8	9	10	11
3	-0.097173	0.351096	0.088545	-0.077079
4	-0.483714	-0.138577	0.129473	-0.066487
7	-0.212586	-0.114466	-0.317461	0.078280
10	0.002686	0.663342	0.043505	-0.047465
12	0.279821	0.235476	0.275298	-0.193801
13	-0.[illegible]4114	-0.029924	0.067448	-0.016427
14	0.011863	-0.062955	-0.250930	-0.069175
15	0.033483	0.091291	0.102521	-0.010629
16	0.[illegible]70495	0.[illegible]84153	0.024343	-0.135011
17	0.137462	0.[illegible]77758	-0.094506	-0.180514
18	-0.[illegible]23422	0.[illegible]41037	0.164941	-0.012847
19	-0.017658	0.265784	0.496847	-0.016035
20	-0.[illegible]07994	0.128394	-0.099852	-0.097822
21	-0.[illegible]17187	0.135912	-0.045953	-0.113414
22	0.019872	0.100506	-0.147753	-0.365266
23	0.044345	0.094533	-0.048315	-0.046937
24	0.045270	0.090586	-0.079113	-0.049883
25	0.259905	-0.151684	-0.019114	-0.044770
26	0.094452	0.174308	-0.166595	-0.590836
28	0.132[illegible]34	0.322493	-0.011273	-0.433623
31	-0.[illegible]12114	-0.033836	-0.138019	-0.180463
32	0.059357	0.[illegible]05558	0.016004	-0.058211
33	0.114363	-0.067454	0.034740	-0.061271
34	-0.062468	-0.178151	0.287641	-0.615417
35	0.119878	-0.326491	0.210331	0.114258
36	0.019116	0.009532	-0.061499	-0.113678
37	0.077655	-0.027557	0.073853	-0.064609
38	-0.078232	0.131684	0.082052	-0.340920
39	-0.[illegible]03269	0.139149	-0.015228	-0.016788
40	0.494583	-0.190562	0.106563	-0.190333
41	-0.088227	0.017363	0.209591	0.036297
42	0.576982	0.056931	-0.021406	-0.004969
43	0.232719	-0.123965	0.174455	0.032879
44	0.198995	-0.133966	0.080662	0.009475
45	-0.215[illegible]13	-0.057540	0.140930	-0.101468
46	-0.110413	0.195275	-0.175754	0.004124
47	0.[illegible]14345	0.097858	-0.057988	-0.062386
48	-0.[illegible]40870	0.258748	0.289746	0.080100
49	0.034952	-0.031402	0.101806	-0.095959
50	-0.167[illegible]94	0.287569	0.033959	-0.007992
51	0.168595	0.[illegible]71907	-0.[illegible]27029	0.044293
52	0.[illegible]71757	-0.[illegible]49805	0.096226	-0.044548
53	-0.001857	-0.072280	0.176343	-0.087226
54	0.[illegible]55672	0.090764	-0.230774	-0.[illegible]65043
55	0.[illegible]92908	-0.[illegible]65272	-0.077632	0.[illegible]87035
56	0.[illegible]17611	0.[illegible]25914	0.030741	-0.124316
57	-0.[illegible]21[illegible]59	-0.[illegible]10364	0.118239	-0.090633

APPENDIX D

Means, Standard Deviations and Intercorrelations of Indices and Selected Variables From the Twelfth Grade Student Questionnaire

1*	I	Expectations
2	II	Socio-Economic Status
3	III	Social Confidence
4	IV	Attitude Toward Life
5	V	Family Structure and Stability
6	VI	Educational Desires and Plans
7	VII	Study Habits
8	VIII	Achievement Composite
9	1**	Sex
10	2	Age
11	5	Racial Ethnic Differences
12	6	Number of Persons in the Home
13	8	Number of Older Siblings
14	9	Number of Siblings Dropped Out High School
15	10	Foreign Language Spoken by Parents
16	11	Foreign Language Spoken by Student
17	25	PTA Attendence
18	29	Attended Kindergarten
19	30	Infrequent Change in Schools
20	39	Few Voluntary Absences

*These numbers represent the order of the variables as they appear on the following sheets.

**These numbers indicate the variables as they appear in the list of variables.

EDUCATIONAL MODELS PROJECT
12TH GRADE STUDENTS CORRELATION MATRIX

TOTAL SAMPLE

THE NUMBER OF OBSERVATIONS IS 2223579.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
1	-331582.6523	11349295.1250	-0.1491	2.2543	2.2543
2	-273359.5859	10717283.0000	-0.1229	2.1920	2.1920
3	-4744234.3750	0.15438085E 09	-2.1336	8.0546	8.0546
4	-2237737.3438	48873303.0000	-1.0064	4.5790	4.5790
5	-378682.7891	9795762.7500	-0.1703	2.0920	2.0920
6	-474080.2383	23128398.0000	-0.2132	3.2181	3.2181
7	-766688.5859	18098265.0000	-0.3448	2.8320	2.8320
8	8280.6709	29595743.5000	0.0037	3.6483	3.6483
9	-123396.6582	2802031.5313	-0.0555	1.1212	1.1212
10	-41743.1216	2320425.1563	-0.0188	1.0214	1.0214
11	-38226.0518	2268144.8750	-0.0172	1.0098	1.0098
12	-61747.3706	2350849.9063	-0.0278	1.0278	1.0278
13	-63558.8115	2373786.1250	-0.0286	1.0328	1.0328
14	-27559.4756	2236454.5000	-0.0124	1.0028	1.0028
15	-109983.0850	2791154.0938	-0.0495	1.1193	1.1193
16	-78402.0586	2524696.5313	-0.0353	1.0650	1.0650
17	-151546.3906	2987420.4688	-0.0682	1.1571	1.1571
18	-96347.1582	2612448.5625	-0.0433	1.0831	1.0831
19	-303677.6250	6672188.8125	-0.1366	1.7268	1.7268
20	-1698.0442	2214453.1875	-0.0008	0.9979	0.9979

EDUCATIONAL MODELS PROJECT
12TH GRADE STUDENTS CORRELATION MATRIX

CORRELATION MATRIX TOTAL SAMPLE

	1	2	3	4	5	6	7
1	1.000000	0.260441	0.181465	0.279822	0.180686	0.510909	0.340804
2	0.260441	1.000000	0.215951	0.288226	0.360208	0.476083	0.340248
3	0.181465	0.215951	1.000000	0.844410	0.247303	0.220942	0.405631
4	0.279822	0.288226	0.844410	1.000000	0.259675	0.331819	0.404168
5	0.180686	0.360208	0.247303	0.259675	1.000000	0.202917	0.379536
6	0.510909	0.476083	0.220942	0.331819	0.202917	1.000000	0.347086
7	0.340804	0.340248	0.405631	0.404168	0.379536	0.347086	1.000000
8	0.352663	0.478198	0.253595	0.419675	0.225854	0.486795	0.229718
9	0.077507	0.131274	0.091044	0.054274	0.200206	0.164131	0.138725
10	0.198986	0.246273	0.177539	0.224479	0.205379	0.227144	0.201993
11	-0.002552	0.350238	0.242422	0.276961	0.270351	0.064185	0.129007
12	0.085632	0.339969	0.123803	0.150593	0.171365	0.144648	0.174557
13	0.121096	0.439988	0.110294	0.144379	0.229580	0.192082	0.181671
14	0.142695	0.414711	0.102383	0.150071	0.216568	0.228819	0.162082
15	0.126339	0.180398	0.128735	0.156300	0.216795	0.101014	0.244633
16	0.138655	0.207588	0.127751	0.138482	0.176748	0.156021	0.227814
17	0.162929	0.198608	0.173058	0.179917	0.218600	0.182101	0.312192
18	0.066746	0.344612	0.165840	0.159066	0.182548	0.184414	0.255173
19	0.132411	0.201007	0.291008	0.252813	0.342984	0.141368	0.506278
20	0.196093	0.153146	0.078683	0.094115	0.035883	0.286028	0.167523

	8	9	10	11	12	13	14
1	0.352663	0.077507	0.198986	-0.002552	0.085632	0.121096	0.142695
2	0.478198	0.131274	0.246273	0.350238	0.339969	0.439988	0.414711
3	0.253595	0.091044	0.177539	0.242422	0.123803	0.110294	0.102383
4	0.419675	0.054274	0.224479	0.276961	0.150593	0.144379	0.150071
5	0.225854	0.200206	0.205379	0.270351	0.171365	0.229580	0.216568
6	0.486795	0.164131	0.227144	0.064185	0.144648	0.192082	0.228819
7	0.229718	0.138725	0.201993	0.129007	0.174557	0.181671	0.162082
8	1.000000	0.073988	0.288392	0.447531	0.196711	0.240850	0.262068
9	0.073988	1.000000	-0.019726	0.057099	0.106387	0.099035	0.077634
10	0.288392	-0.019726	1.000000	0.159978	0.136740	0.142302	0.170199
11	0.447531	0.057099	0.159978	1.000000	0.275329	0.219744	0.211655
12	0.196711	0.106387	0.136740	0.275329	1.000000	0.216010	0.174205
13	0.240850	0.099035	0.142302	0.219744	0.216010	1.000000	0.669956
14	0.262068	0.077634	0.170199	0.211655	0.174205	0.669956	1.000000
15	0.138500	0.147082	0.142818	0.103748	0.134383	0.115426	0.097256
16	0.144215	0.120216	0.140927	0.080282	0.112942	0.107932	0.103798
17	0.138297	0.067003	0.098042	0.074797	0.077534	0.099742	0.098374
18	0.194676	0.129332	0.111438	0.117834	0.138384	0.183949	0.162251
19	0.095987	0.248668	0.135102	0.105787	0.130790	0.120291	0.084414
20	0.065158	0.068051	0.041879	-0.079697	0.006465	0.028879	0.053888

CORRELATION MATRIX TOTAL SAMPLE

	15	16	17	18	19	20
1	0.126339	0.138655	0.162929	0.066746	0.132411	0.196093
2	0.180398	0.207588	0.198608	0.344612	0.201007	0.153146
3	0.128735	0.127751	0.173058	0.165840	0.291098	0.078683
4	0.156300	0.138482	0.179917	0.159066	0.252815	0.094115
5	0.216795	0.176748	0.218600	0.182548	0.342984	0.035883
6	0.101014	0.156021	0.182101	0.184414	0.141368	0.286028
7	0.244633	0.227814	0.312192	0.255173	0.506278	0.167523
8	0.138500	0.144215	0.138297	0.194676	0.095987	0.065158
9	0.147082	0.120216	0.067003	0.129332	0.248668	0.068051
10	0.142818	0.140927	0.098042	0.111438	0.135102	0.041879
11	0.103748	0.080282	0.074797	0.117834	0.105787	-0.079697
12	0.134383	0.112942	0.077534	0.138384	0.130790	0.006465
13	0.116426	0.107932	0.099742	0.183949	0.120291	0.028879
14	0.097256	0.103798	0.098374	0.162251	0.084414	0.053888
15	1.000000	0.197939	0.112169	0.063581	0.225251	-0.009416
16	0.197939	1.000000	0.113698	0.134210	0.194830	0.076521
17	0.112169	0.113698	1.000000	0.120037	0.233909	0.097702
18	0.063581	0.134210	0.120037	1.000000	0.260843	0.070977
19	0.225251	0.194830	0.233909	0.260843	1.000000	0.059533
20	-0.009416	0.076521	0.097702	0.070977	0.059533	1.000000